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The Sad Story of American Housing

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PHILADELPHIA, "city of brotherly love," has many fine traditions. The gridiron street system, laid down by William Penn, is not to be counted among them. As a city-planning method it constituted a mistaken experiment that has since ripened into a calamitous habit. The gridiron city plan brings about the narrow attenuated lot quite as directly as the shape of a pork chop is dependent on the ribs of the hog. In Philadelphia itself, these lots were occupied full width by closed rows of the "town house"; but not even the virtues of these closed rows, such as they were, remained when the gridiron crossed the Alleghanies and migrated over the national highway, or "overland," route into the Central West.

The most extensive and natural habitat of the gridiron street, with its attendant narrow lot and sunless side alley, has not been geographic but psychological, in the real-estate operator's mind. Here these three have been lodged as tenants by perpetual lease, salamanders never to be burnt out by even the hottest fire, or perhaps even as ineradicable grooves worn into the brain. To suggest that better methods were available has made no impression. To erect physical examples, in which the superiority of other methods has been successfully demonstrated, has as yet caused hardly a ripple. There remains, then, for us to examine the product of this speculative builder himself, to see whether the recent depression-sobered past has led him to develop anything *within* his narrow frame upon which we might predicate

some kind of an advance, however halting, toward an adequate housing procedure.

The gridiron street pattern spread rapidly over almost the whole country during the period of rapid expansion and city building of the nineteenth century. The expansion followed the great avenues of commerce. Thus we find a brick town architecture, closely modelled on the seaboard cities in form and appearance, extending to Pittsburgh, and thence down the Ohio River to Cincinnati, to Louisville, and eventually to St. Louis on the upper Mississippi River. Other traditions than those brought over the mountains may have contributed in these new cities to the arrangement of the houses in detail. But in shape and general appearance the early houses of all these cities distinctly recall Philadelphia. The row principle in itself is not undesirable; in fact, row houses properly planned constitute the most hopeful form of low-cost single-family dwelling to be found here or in Europe. It is the tradition of the *narrow lot* with which we are concerned.

In the Pittsburgh area the practice of continuous row grouping was continued, and again at Wheeling. Even in the small town of Mount Pleasant, Ohio, near Wheeling, where land could scarcely at any time have been worth more than a few cents a square foot, houses on the main street were built in attached rows. In one case (here illustrated) an archway was placed at the end of the group to reach the rear yard, the house wall being carried up windowless on the property line.

But an important change took place when city building reached the more open plain of the Ohio Valley at Cincinnati. Here the town house met the impact of the pioneer spirit. The house

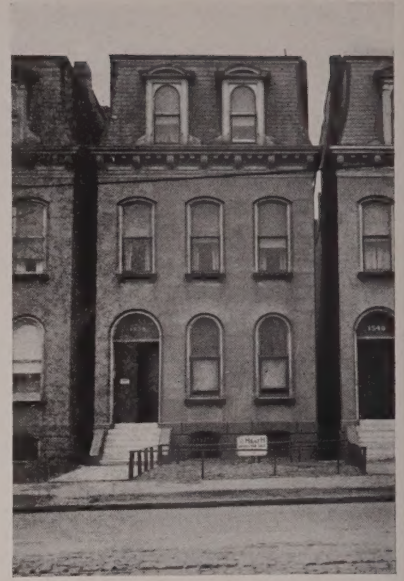
This article is adapted from a chapter of Mr. Wright's forthcoming book, *How Shall We House?* the manuscript of which is now being made ready for the press.—EDITOR.



The Philadelphia row house of 1850—which with the gridiron plan and narrow lot have caused most of our housing troubles

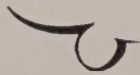


In Mount Pleasant, Ohio, 1870, where the row house was continued with an archway at the end of the group to reach the rear yard



St. Louis, 1880, where our rugged individualism separated the houses by two feet—wide enough for the alley cat, but not for windows

was split from its neighbor by a narrow side yard—sometimes a mere passageway, sometimes faced by a few small windows. At St. Louis the precedent of Philadelphia is quite evident. But here the cleft between the houses divides them by only two feet—it is too narrow for passage except by alley cats, and is utilized for no window exposure; it is entirely meaningless, therefore, except as a vigorous expression of what our “rugged individualism” occasionally leads us to. Half a century has passed since this particular expression flourished; it has been discontinued on any large scale; but the fetish that inspired it has remained dominant throughout all the subsequent housing evolution.



Let us trace this evolution through a period of thirty years in the typical building construction of St. Louis. We shall find constant change, virtually devoid of any significant progress. From the town house characteristic of the 1870–1890 period we pass to the less stilted city house of 1890–1900. This latter is less rectangular, but it keeps to the narrow side yard. There is not yet a pressure from the rise of frontage costs that would explain such crowding.

At the turn of the century the increased complexities of street utilities have pushed up frontage costs to a point requiring more inten-

sive use. The two-story house is evolved, with one family on each floor. This type is known generally as the “St. Louis flat,” although it is by no means confined to St. Louis, since Chicago, for example, houses 375,000 families in this type of dwelling. The rectangular plan has to be lengthened, and the additional length emphasizes still more clearly the fissure-like character of the side yard.

For a decade the detached two-decker satisfied the demands of frontage economy. Then the unguided processes of rugged individualism, exemplified in neighborhoods of repetitive brick fronts, required a further contraction. The two-family unit was doubled along the party wall. This called for long dark interior halls and an exposure for most of the rooms on the narrow side yard. The arrangement of the rooms themselves in tandem, one behind the other, is an onerous one for purposes of housekeeping; yet it is the actual or at least the progenitive pattern of at least 70 per cent of the present housing in St. Louis, and of an even greater proportion in Chicago, to say nothing of Cleveland, Cincinnati, and Newark. The original Eastern row house was in itself fairly reasonable; it is the precedent which it established, of narrow-lot squeezing, which has done all the damage, having been accepted ever since as a necessary accompaniment of moderate-cost dwellings.

The fourth step in the evolution in these cities (the group now expanded by the inclusion



St. Louis, 1890-1900—the house less stilted, but holding the narrow side yard even at the low cost of lot frontage



St. Louis, 1900-1910—the evolution of the “St. Louis flat,” with plan lengthened and narrow side yard handicaps intensified



St. Louis, 1910-1920—doubling the two-family unit on a party wall and providing long interior dark halls, still with narrow yards

of Kansas City and similar later communities) was to build up the double two-family flat to three stories. The tandem room arrangement was of course retained. The side yard remained narrow as before, and not only was its shadow deepened still further by the new floor, but, in the popular mode of the day, porches were added front and back as a still further discouragement to the feeble, smoky sunlight of these industrial cities. Nor was the situation relieved when the demands for larger dwelling space required the widening of the double unit, to gain a narrow extra room at the front and the rear. This process increased the distance in all the intermediate rooms from the inner wall to the window, which transmitted none too much light as it was.

The final decade has seen the expansion of the widened three-story double flat for service in the high-rent field. An interior court is introduced to form a U, with many of the rooms still ranged along the persistent narrow side-line courtyard. Chicago offers variations on these new atrocities, first by the introduction of the three-story detached flat (embracing about 170,000 dwellings), and then by closing up the front façade to give the effect of a nice continuous row, a procedure which just happens to cut off the already scanty circulation of air along the side courts.

Meanwhile, in many smaller cities the effort was successfully carried through to widen the

standard lot. Forthwith an unguided public demand for the still more wasteful “bungalow” of one story filled up and overcrowded the lot in its new generous proportions. By 1930 even the builder himself realized that these bungalows looked somewhat awkward, jammed together. A movement then spread to camouflage the bungalow as a modest cottage. A high-pitch “cross gable” was turned across the front façade, to hide the huge mass of the house as it lumbered rearward, its main roof being kept invisible by virtue of a lower pitch. This ingenuity was cleverly manipulated in many Minneapolis examples, but botched in other cities. The ubiquitous front chimney, badly placed for living with, but easy to advertise, was also characteristic of this period.



Here at last was a spark of hope. Having once turned the roof, the builder might by some accident have hit on the corresponding expedient of rearranging the whole house. Having created the effect, he might have followed with the plain fact. At least he might have modified those extreme mistakes of form which had led him into the ultimate confession implied by his camouflage. But no, the spark of hope flickers and dies out. In 1929, 1930, 1931, we find the practical builder repeating the evolution that



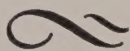
St. Louis, 1915-1925, extended the double two-family dwelling upward to three stories, retaining the tandem layout and adding porches



St. Louis, 1925-1930—the expansion of the widened tree-story double flat to the high-rent field, in which an interior court is introduced to form a “U” plan, still with the narrow side yards. Chicago followed suit with about 170,000 dwellings

had already taken place in 1903, 1904, 1905. The causes and the effects are naïvely simple.

The bungalow is popular, therefore the accommodating realty effort, “striving to please,” must retain it. Keeping an ear to the ground, “understanding and interpreting the public demand,” is the admitted major accomplishment of the real-estate profession. But the bungalow, particularly in its crude narrow-lot form, happens to entail waste and expense which sooner or later register themselves as “sales resistance,” something which, we regret, has never been countermanded by any Eighteenth Amendment. So the resourceful mind of the speculative builder invents the “investment bungalow,” with an annex on the rear attic for a subtenant who pays part of the rent. Some sacrifice is appropriately required of the owning family on the first floor. The extra stairway needed for the new upper tenant crowds the living-room of the main unit forward into the erstwhile sun porch.



The next step for the practical mind is naturally to provide more space above for more rent, and the upper dwelling is consequently expanded into almost a full replica of that below. Almost, because the new two-family structure must still masquerade as a modest bungalow—for who wishes to admit his dependence on his neighbor (above) for the lion's

share of his monthly costs? Very ingeniously the public is coddled into receiving this almost final step in the undoing of its bungalow ideal—very ingeniously deceptive in front, but brutally frank behind.

Finally the top story pushes itself out into a full replica of the story below—but still not quite. The effect must still be guarded by the “draping” of a false gambrel roof, which doesn't really fool any one, but makes a highly valued variation for each alternate unit in an endless row of equally dreary façades. But, prize of all! throughout this whole process the hardy resistance of the speculative builder's mind has preserved its integrity. Look down the line of these full-fledged two-flat dwellings of 1931. The “sun porch” appendage is still maintained in its distinguishing brick appliqué as the front half of the living-room, tied into the frame half of this room by the fake brick fireplace, at each side of which is the proverbial small window over the proverbial bookshelves; the get-up distinctly advertising the interior dishonesty by the fact that one window is in frame and the other in brick.

Need we introduce further evidence of the innate poverty of the whole ridiculous procedure? True enough, the public at first glance thinks it is getting the most house for its money if every available inch of the lot has something on it; but not even the general public insists on buying the largest suit of clothes in a store, or even insists any longer on the bulkiest furnace. When we consider such items as the construc-

The Minneapolis bungalow of 1930. The lot was widened, but the unguided popular demand for the one-story dwelling filled up this additional width. Here the row house is camouflaged to simulate a row of detached cottages. The badly placed but well advertised front chimney is characteristic of the period



tion wastes and the heat losses of our present-day, long, leaky barges, the calculation is less one of standards of sunlight or comfort than one of plain arithmetic; every ton of coal thrown out of the window decreases purchasing power, a part of which would have been available to the building industry. The public is ready to understand the comparative economics of the case whenever they are explained; but not so the builder. Housing progress in this country is impossible because of the inadequacy, amateurishness, and incapacity of those groups to whom it has been entrusted as a side line to land merchandising and the mortgage business. It is time here as elsewhere for a distinctly "new deal."

We are not concerned, in this discussion, with land economics or finance as such. We are interested in them only in relation to housing. Hitherto they have pretty well buried housing.

If we stick strictly to the problem before us, determining that in some fashion or other housing must be accomplished, then from our standpoint it is a nuisance that so much of the "economics" of the land is entirely distinct from its useful employment.

Progressive housing, as practised both in this country and abroad, is based on the principle of compact districts developed to their fullest use in advance of any improvement of adjacent areas—such practice permits reasonable land development and specific planning. The general American practice, on the contrary, is one which permits vast areas around the city to be bought up years in advance of any possible use and held for ostensible "ripening." Figures covering the city of Grand Rapids, and assembled by Professor Ernest M. Fisher, of

the University of Michigan, show a not unusual case. During twenty-two years, 1909–1931, covered by the study, approximately two lots were platted for every one used for building purposes. The whole number of lots used was only slightly greater than the number available and unused in 1909. "If utilization of lots should continue at the average rate prevailing between 1909 and 1931, it would require thirty-five years to absorb into use all of the lots which are now vacant."



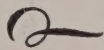
This statement of fact is sufficient, without further deductions, to exhibit the wildness and the irresponsibility involved. This practice of speculative holding carries a triple menace. In the first place, it prevents the assembling, at a low price, of land needed by actual developers. In the second place, it has led our cities to the installation of expensive public services, far in advance of possible use; and, what is more important, in the third place, the city plans are deprived of any real or definite objective in terms of a specific region to be used in a special way. The street pattern has therefore had to be reduced to the lowest standardized plane—a pattern of short blocks with an excessive number of cross streets requiring utilities and services. Thus we come upon the gridiron once more. No possibility has existed of foretelling which of the streets would be commercial and which entirely residential; and therefore *all* streets have been given the heavier construction necessary for commercial traffic.



At right, the 1929 Buffalo bungalow. Next door to it is the next step of 1930-31—the "investment bungalow," with an annex on the rear attic for a sub-tenant. The living room of the lower unit is crowded forward into what had started as a sun porch

The development of the land as a separate operation from building has entailed excessive charges for the separate items of subdividers' overhead, carrying charges until use, and profit. The number of fees and other contributions required to bring the separate organizations along the different divisions and stages of the work into some kind of alignment has already been described in the book "Housing America" by the editors of *Fortune*.

Through these costs, plus the high taxes involved in the cities' wasteful procedure, all existing moderate-intensity housing areas have been subjected to an immense burden which has forced their conversion to more intensive uses. The more intensive use, capitalized in turn as higher land value, has imposed multi-story buildings which put further heavy demands on streets and public services, so that the vicious circle is completed, with congestion everywhere and mounting public costs. The ironic result to the citizen who works in the central business district is that city expansion, despite its high cost, has been carried beyond the point of any convenience to him in terms of location.



As to the habits of land subdivision, we shall encounter again and again the vicious effect of habits formed, all of which rest on the single-family house. Since the first development of an outlying area is generally in terms of this single, free-standing house, land is platted in narrow, deep lots, and this constriction of the lot remains as a disadvantage to every further step. The history of the flat is essentially the history of a potentially superior building type thwarted at the outset by the single-family lot.

THE COSTS AND COMPLEXITIES OF HOUSING FINANCE

It has been shown in frequently published studies that of the average dollar expended for home purchase in the United States, approximately twenty-seven cents go into financing and promotion charges. This is more than is spent either for construction materials or for labor on the job, and considerably more than the average actual cost of the land and its improvement. This exorbitant cost of financing arises chiefly from our system of junior mortgages, with their large element of risk accompanied by higher rates of interest, plus discounts, commissions, and renewal fees. That the risks are real is attested by the widespread bankruptcy of second-mortgage houses, and by the difficulties of finding reputable sources of junior finance.

The first step in the cure of this situation lies in the improvement of the housing product as such. Improved planning in terms of stable communities will decrease the risks of vacancies and obsolescence to a point permitting conservative sources of money safely to enlarge the scope of first mortgages. Second mortgages, if any, may then be stripped of most of their risk, and the amortization of all loans may be safely spread over materially longer periods than in present practice.

A desirable simplification would be for a larger proportion or all the mortgage money to come from a single source, a practice which can be justified for housing of demonstrated stability in use. Not even the most drastic economies achieved by skimping on construction costs could produce savings in rentals or in ownership charges equal to those to be derived from the slower rate of amortization resulting from stable financing.

Here is the rear of the 1931 investment bungalow. It masquerades in front as a "Dutch bungalow," but drops all pretense in the rear. This is not a sporadic case, but represents the bulk of a year's building in a large city, approved for financing by reputable mortgage sources



The final goal in housing finance, however, is not merely that of improving mortgage rates, extending amortization periods, or simplifying the present complicated mess of senior, junior, and sub-junior mortgages, desirable though this might be. Large-scale housing should and must find its place as a primary investment which will attract permanent money, not temporary mortgage advances which must rapidly be withdrawn less because the undertaking is risky than because the lender has limited means. Such investment money should stand at least on a par with other public utility securities as a permanent stock subscription—negotiable as collateral, to be sure, but remaining in the general housing enterprise, as opposed to any particular housing project.* The investment of such capital by the operating company in any particular housing unit would necessarily be protected by an adequate depreciation reserve, set aside regularly and specifically to offset probable reductions in current earning power from whatever cause. That is, it would take care of possible changes in surrounding conditions, making it possible to reduce rents, to allow for obsolescence or else to reduce it by undertaking alterations and renovations, and to permit complete restoration when necessary either in the same location or in another one. This would keep the capital continuously employed, without demanding the double drain on rentals for both depreciation and amortization which now is necessary in some degree even in large-scale projects, however well planned and managed.

* A very able series of articles published during 1932 in *Building Investment*, by Mr. Arthur C. Holden, vividly contrasts the nature of present-day real-estate investments and industrial ones.

As long as we remain dependent on mortgages, we are particularly handicapped by another bad financial habit, which consists in appraising projects on a wholesale basis. If gross cubage is to be the only measure, then a wasteful building not only escapes punishment but is often rewarded for its waste. Better planned, better built, and, most especially, better managed and protected projects should definitely be entitled to preferential treatment, both in priority of mortgages and in per cent covered by mortgage, although such preferment is seldom encountered today.



Quite another aspect of this subject has to do with the general extravagance and multiplicity of business charges assessed against house construction at every stage of production, from the subdivision of the raw land up to the trussing of the purchaser in his own shoe-string. It might be considered going rather far to suggest that this sort of thing is respectable rather than racketeering, were it not that so many respectable agencies are implicated at some point in the process of building, mortgaging, advertising and selling. If there is any one best reason why investments in the field of "home" building have dried up, it lies in the practices connected with nearly every phase of production. The growing insistence that the first mortgage cover a lower per cent, and the demand for bonuses, arise directly out of the fact that those who supply mortgage money know too much about the



Buffalo, 1931, the second year of the depression. The top story is extended forward to make a full replica of the flat below, but the fact must still be hidden by the draping of a false gambrel-roof effect. The sun-porch appendage is still distinguished by its brick appliqué as the front half of the living-room, tied into the frame half of this room by a fake brick fireplace, on each side of which is the small window over the proverbial book shelves

inside workings of the system, and properly hesitate to loan more than the equivalent of the actual tangible assets. At the time when Sunnyside was built, there was a certain house in it that was offered at \$8,300; one of the largest and most respectable agencies building in a competitive district offered an apparently equal house at \$6,000. Equalizing the land value of the two houses by subtracting the extra cost in Sunnyside of improved vacant land, the Sunnyside house would come to \$7,650. Yet the actual expenditures going into the complete building (all payments for labor, materials, equipment, fixtures, decoration and the like, and also

building overhead) were only \$2,450 for the competing house as against \$5,212 for Sunnyside. Or, stated somewhat differently, the purchase price in the two cases represented *construction* costs as against *marketing* costs in very different proportions. For the \$6,000 house, lot and improvements cost \$675; landscaping \$175; building complete \$2,450; and then came a marketing overhead of \$2,690, or about 45 per cent of the price. For the \$8,300 cost, the same items were \$1,325, \$200, \$5,212 and \$1,563 respectively—that is, 61 per cent went into building and only 19 per cent into marketing overhead.

WHAT HOPE FROM PRESENT METHODS?

Have we now reached the point at which we can summarize what seems to be the present situation? We find that our cities not only suffer from slums but are riddled with blight throughout the great range of their supposedly middle-class construction. Such blight calls for rehabilitation before we can safely engage in any further irresponsible expansion. When we examine the housing types available for such rehabilitation, we find that we have an increasing proportion of group dwellings housing more than a single family; the single-family house is doomed to a permanent recession. These multi-family houses of ours—mostly flats, and only 5

per cent of them serviced apartments—have grown up under the hand of the speculative builder. We find them still struggling, as in 1900, with the narrow, single-family lot, or derivatives that are only slightly modified. We find the enterprise hampered by excessive holding of land for “ripening,” by huge city outlays for services that cannot serve, by financial charges which represent in the main a measuring-rod of the chaos. We may now look about to see whether these normal processes of real-estate and speculative building are likely to improve. The answer, unfortunately but very positively, is “No.”



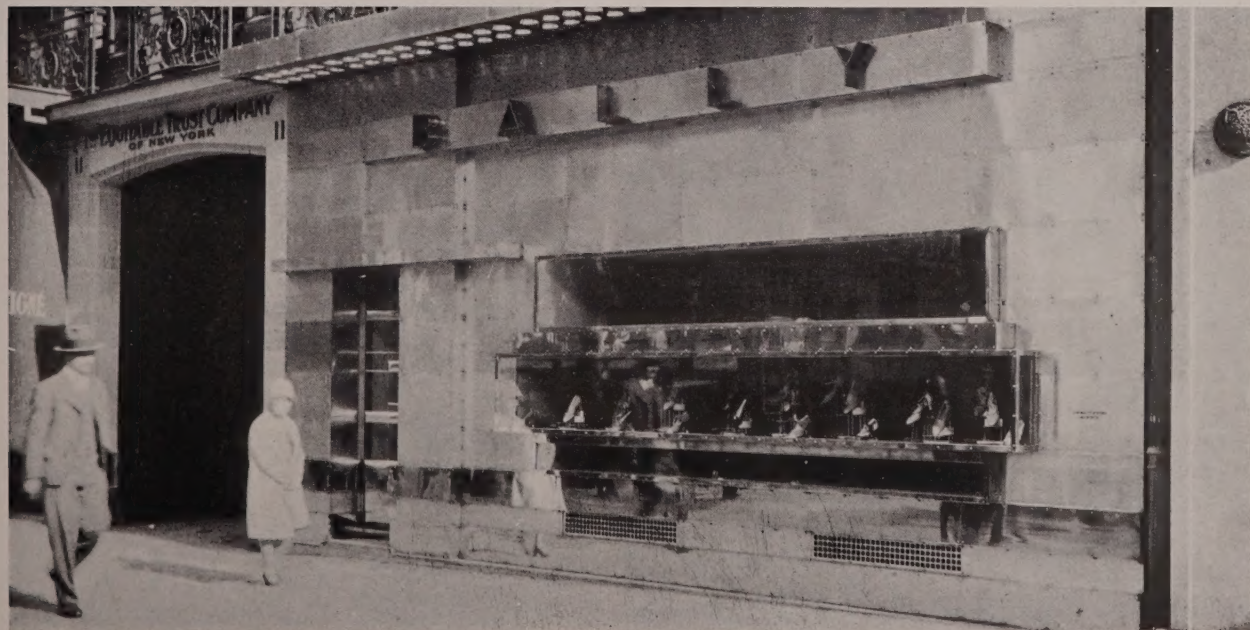
Parisian and Dutch Shop Fronts

PHOTOGRAPHS AND CAPTIONS BY GERALD K. GEERLINGS



45 Boulevard Haussmann. The outer window frame, sill, base course, and basement "mullions" are of white marble with black veining. Basement grilles are dull silver in color. The broad expanse of gray semi-opaque glass above the show window is mottled, and not quite smooth. The circular sign has a silvery rim and letters, against an imitation mother-of-pearl background

Shoe shop, Boulevard de la Madeleine, a combination of polished steel with sheet brass. The simplicity and unexpected color are both good architecture and good advertising. All is steel, except for the brass base course and the band immediately below the window. Lights and reflectors are housed in the projecting soffit overhead



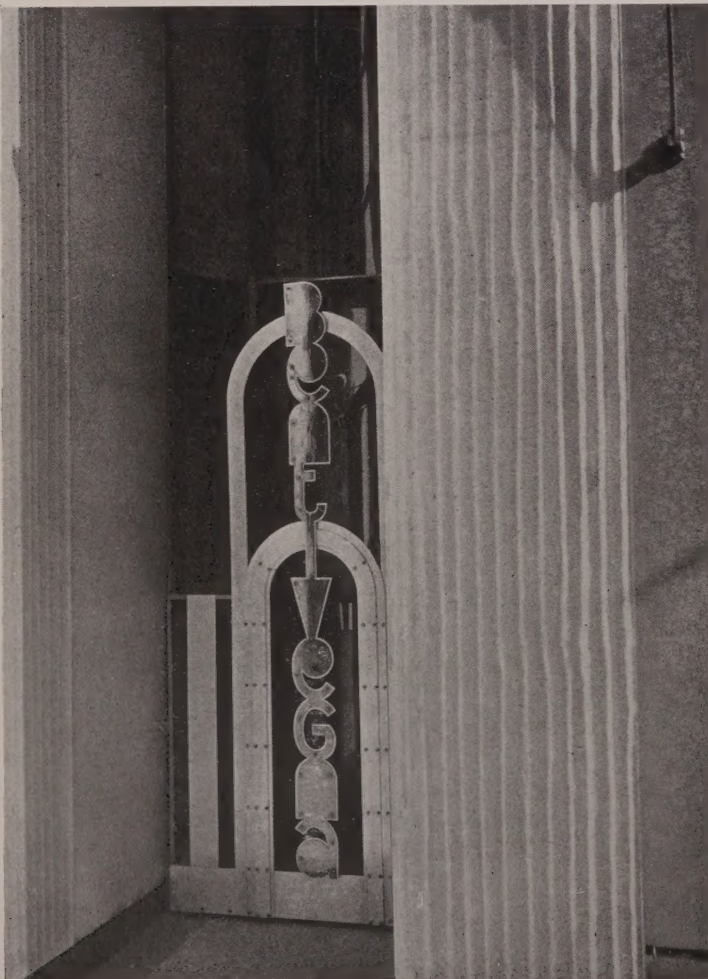
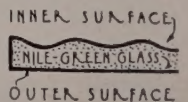


A detail of the Bally shoe shop, showing the two projecting brass courses at the base, and the end of the show window "set-backs." The steel plates are flush, and are held in position by cylindrical rivets (see sketch). The door is brass in color



Rue de Faubourg Saint-Honoré. (Maurice Bizet, architect.) This design comprises a versatile union of: two Paris houses with different floor levels, the requirements of an expensive shoe shop, and a design influence imported from perhaps the vicinity of the Nile. The entrance motif is of Nile-green glass ribbed underneath, with an opaque glass panel above the entrance. The show windows have plain facias of mottled gold finish; the window backs have old-gold background and drapes, with the sides in two shades of wide yellow stripes. The base band and signs are lacquer red

A detail of the Nile-green glass pilasters, which are ribbed on their under surfaces and smooth on the outer. The base band is lacquer red. The door is of clear glass, having an aluminum-colored metal appliqué design superimposed, and highly polished brass letters spelling "Bentivegna"



GLASS
(OUTSIDE) DOOR
CUT-OUT DESIGN, ON PLATE
OF SILVER-COLORED METAL

Rue Pépinière. The jamb reveals of the door project several inches beyond the face of the glass of the show window, and are built up of a sheet of perforated metal applied to a solid facia (see sketch). Within the scalloped enclosure surmounting the door, and on the letters of the name "Weil," there is red tubing which is illuminated at night. The banded pipe columns at the sides are silver in color; the base of the show window is black marble



Rue St. Florentin. In this conservative rendition of the modern, the T-square and triangle have seemingly played a major design rôle, but for an economic performance it does creditably. The color is particularly pleasing: the marble surrounding the window is white and red, rosy in effect, the base is of gray marble, the step of small red-and-white tile, and the metal, silver in color. The presence of the second-floor windows were an unfortunate circumstance for the designer, certainly

Boulevard Raspail. Here again the Parisian fondness for simple designs in sheet metal asserts itself. The building is of gray-buff limestone; the metal, polished silver in color. The color effect is splendid in reality, but unfortunately it does not record in a photograph. Inside the window, the wood sides and shelving are stained black, and so rubbed that the long coarse grain counts as an interesting over-all whitish design. The vertical metal ribbing in the metal below the window is a half inch in depth

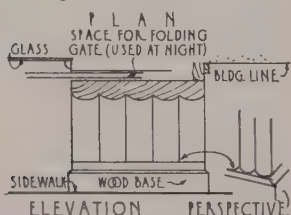


Rue Royale. Another example of the success which attends the simple treatment of a well-designed marble frame for the modern show window. This shop maintains an air of distinction on the wide Royale, which many of its more frippered neighbors lack. Only black-and-gold marble, and bronze window frames, have been used, but the profiles of the marble offsets are more effective than broadcast ornament



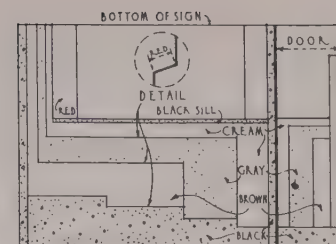
Boulevard Haussmann and the rue La-fitte. If the modern movement has done nothing more than to make us realize the possibilities in shade and shadow, it has achieved sufficient to justify some of its errors, at any rate. In this example, instead of meaningless pilasters there are simple offsets in the jamb which help to focus the interest on the actual window and entrance door. The jambs are of white marble, slightly streaked with gray; the cornice fascia is of dark gray marble, with the soffit of sheet bronze; the base of black marble; the window frame is of highly polished bronze

21 rue du Val de Grâce. An admirable adaptation of the historic in terms of the modern—simplifying pilasters and entablature so that they become secondary in importance to the merchandise display. The wood has been only lightly stained and then waxed; the etched glass patterns in the transom and upper part of the windows fall below the standard of the wood details (see sketch). (In the right-hand glass a window with shutters is reflected from across the street)



◀ ARCHITECTURE ▶





Corner of Boulevard Raspail and rue Brea. (N. Vidal, architect.) Only a color photograph could do justice to this merry café. The frame of the sign is black with inner and outer red margins, the background is cream, the letters black and red. At night illuminated red tubing defines the outline of the letters. The windows have frosted glass, red mullion columns, black sill and lettering. Below the window the wall is painted as indicated in the sketch

Shoe shop, "Centraal," The Hague. This shop is more interesting for the idea it suggests for lighting, and the splayed entrance, than its intrinsic beauty. At night the space above the shop is illuminated, both the ceiling panels and the prisms toward the street. The stepped-back sides of the entrance give a sense of welcome, without the cluttered, complicated appearance of many cheap shops in America. The framework of the shop is dull oxidized bronze; the lettering and window mullions polished bronze; window base is black-and-white marble; the glass "band courses" above the show windows are semi-opaque glass with small spots of blue; the upper flanking signs are blue-and-white glass



Shop on the Oude Gracht, Utrecht. A good example of the modern shop which depends more upon simple forms and color than ornamental abundance. Here there is a range of marble treatment due to the variety in finish, being sometimes honed, again roughened, and only occasionally polished. Corner piers are of gray marble, honed; base and entrance jambs are greenish black, highly polished, except for the shields which are definitely tooled. Above the show windows is opaque glass in black, tan, and yellow. Between this colored glass and the second-story window sills is a version of wood siding, painted a color between orange and tan





Boulevard Haussmann. Another example where the designer has taken advantage of shade and shadow, instead of relying on small-scale ornament. The corner entrance is on a gently curving sweep, with the variety of lighting further increased by the simplified pilasters composed of five curved, ribbed segments. The marble is a pleasing gray with pink veining; the metal work, including the shield over the entrance opening, is bronze



Rue de la Paix. (J. Marrast, architect, 1928.) In this case the designer was faced with the difficult problem of maintaining the existing pilasters which divided the shop into two. The accompanying sketch shows how cleverly the approaching pedestrian is led into the shop with the door at an angle. Above the door the squared decorated area has frosted glass with a rose pattern set in a gilt frame; surrounding the small show window proper is a composition material in black and gold; the door and the base grille are of wrought iron

Rue de la Paix. Even without the name of the London house one could almost know for a certainty that this restrained front was an English version of French modernism. For the unextravagant shop front which favors conservatism, this design may contribute a few sugges-



tions. Black-and-white marble supplies the outer frame, door stiles, and jamb reveal, while the windows are surrounded by cream-colored marble with gray veining. The window muntins and letters forming the name are of bronze; the door and the upper windows are apple green in color



Photographs by Robert MacLean Glasgow

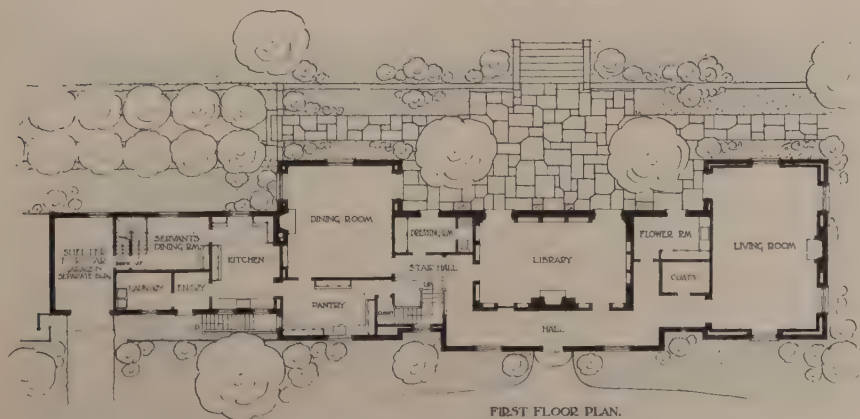
House of Benjamin A. Mosser, Morristown, N. J.

GREVILLE RICKARD, ARCHITECT

The house is built of a common brick with raked joints, liberally supported by cast concrete blocks in the quoins, on the gable rakes, and elsewhere. The roof is of variegated red flat tile



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

SCALE
0 5 10 20



A local field stone is used for the first-story walls between the bays; this, the brickwork, and the cast concrete being covered with whitewash in which there is a trace of yellow ochre. The terrace paving is of variegated flagstones

« ARCHITECTURE »



*A view taken sharply
across the terrace front.
For the garden walls,
brick capped by flag-
stone has been used.
Shutters are blue-
green, woodwork
white. Wood case-
ments are used
throughout*



The service wing, with the garage space for a single car—there is a separate garage building elsewhere on the estate. The dormers are roofed with copper, the cheek walls being formed by the roof tile, carried across in corresponding courses. Garage doors are of natural oak. Chimney pots are natural clay color, darkening through use

◀ ARCHITECTURE ▶



Above, the library, the walls of which are of gum wood finished with a light stain, maintaining almost the natural color of the wood. All bookshelves, it will be noted, are fully recessed



A corner of the flower room, in which a brightly colored wall-paper has been used and shellacked. The floor is of linoleum, and the sink of monel metal



◀ ARCHITECTURE ▶

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A view through the long hall looking towards the stairway. The ceiling beams are of roughly hewn oak, the floor of oak planks, and the plaster, hand worked with an integral brown coloring. To the hangings is entrusted the task of providing strong color



In the dining-room the plaster walls and the woodwork are painted. There is an interesting detail here in the sawn window heads, made to cover the curtain rods. The radiation is concealed under the broad window sills



Detail of the main stairway, entirely of oak. The millwork has been given a very light stain as compared with the darker one of the rough-hewn timbering

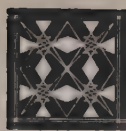
« ARCHITECTURE »



The master's bedroom as shown in a photograph which unfortunately does not include the fireplace in the right-hand wall. The plaster walls are tinted as a foil for the bright chintz colors on hangings and furniture coverings

The building in the foreground is the garage, built throughout of the same materials as those used in the house itself





Organic Structure

By Carleton B. Ryder

Copyright, 1933, by Carleton B. Ryder

"Yet, is it all one."

—Translation of "Black Marigolds" from Sanskrit of Bilhana, by Edward Powys Mathers.

IT has been said of the late Charles H. Moore, Professor of Art at Harvard University, that he was the first to bring out strongly and clearly the "organic structural character of Gothic architecture."

To those who seek the reason in things, that realization is inescapable. *The logical structure is organic.*

In the past three articles of this series the reader has witnessed the advocacy of a Naturalistic, otherwise "Organic," conception of interior design. It has been typified by proposed treatments of Acoustics, Air Conditioning, and Lighting. But let the reader attempt to apply each of those three theories to the same interior, and he will find that he lacks something as important as it is difficult to define. He will realize that the naturalistic, or the physiological aspect of organics are only patterns of a principle, results of the process that shapes a logical structure's growth.

That principle is the indispensable staff of practice. It is the law of Organization: *Consistency.*

Today, the architectural mind is called in a thousand divergent directions. Financial stagnation and conflicting solutions have left him confidence in little or nothing. So the writer is perfectly aware that it is to a righteously dubious audience that this paper is addressed. He asks that the reader accept nothing but the evidently logical in the arguments to follow. If such logic is coherent he will have proved:

First, that the period has exceeded its application, not surpassed its necessity. It lacks only the interpreter, the Organic Technician.

The reader may as well be told, before he finds it out for himself, that this is hard, slow reading. An analysis of the essence of architecture, and of the curious, distorted relation that has grown up between art and science, is, necessarily, not to be dished up as midsummer fiction, or even as sparkling entertainment. You are warned.—EDITOR.

Second, that only by organization may architecture become a logical fabrication of the needs of the occupant—in short, Organic Structure.

Third, that commonplace use of that technique is the immediate privilege of the architect.

DEFINITIONS

The Organic principle, like many another abstract, is most evident in absence, but this characteristic is little help to the study of it. We are setting out to prove the above by examination of that principle, and its workings. Our first move must therefore be to trace its reappearances through an historical sketch of architecture. We then will have the means to its definition in terms of its effect. From the effect we can deduce the cause.

As the result of this method of reasoning we find that:

1. An Organic Structure is the effect of an Organized Cause.

2. The law of Organization is Consistency. But the fullest significance of that word must be understood.

For instance, architecture permitted an inconsistency when it attempted to associate Science and Art, although uncertain as to the relation of the two, or indeed, doubtful as to the existence of any relationship. The structure could not be consistent, could not proceed in every stage of development from a cause to an effect, and achieve a unity, if any two factors were unrelated.

It is characteristic of this most important lack of relationship that about a thousand years ago a condemned Persian poet struck off the coin of truth, the ultimate assay of subsequent doctrines, that heads this article.

In other words, the universe may be resolved into a single principle, possibly that known as energy, of which matter is simply a more finite form. The single structure of science has been erected upon one sound fundamental, *i. e.*, that its coin must be the product of knowledge. And every important step of science points toward such an elemental oneness of all phenomena. The theory represents the utmost in simplicity by the very fact that it excludes the irrational. Inconsistencies cannot exist in a unit.



But two things have happened to nullify the value of Science's example.

First, Science, although its objective is the sociological increase of Man, has been so wrapt in its coils that it is forced to leave its adoption to Man himself. The latter assumed Self to be the exemplification of Man, rather than its smallest unit. So he justified the literal application of Science to the increase of Self. The two are not the same, hence the result is inconsistent and illogical. The admission of this inconsistency, like a fault in the foundation of a building, has cracked every wall.

A second inconsistency was the illogical path of Art.

Although we credit the Persian poet with the minting of the coin of truth, "yet is it all one," we must add that in the same breath he concluded, "yet is it nothing." He had called upon Art to witness his amazing dexterity at counterfeiting the coin of truth with the coin of artistry; pathos.

Pathetic, to say the least! Art apparently went away with no very clear impression as to which was the counterfeit, for its works and its wealth have only been restricted by its artifice. Built indiscriminately upon truth and error, its structure crumbles about as fast as built.

Science and Art are simply different ways to the same end, truth, but the difference is important. Science forbids exceeding knowledge, even though the lesson lags behind, while the artist often tries to make his point clear by over-expression. If his point is the apex of his knowledge, the excess may not be true.

Thus, throughout our review of architecture, we can trace every fault to a lack of consistency, principally in the loose association of Science and Art.

In this light our earliest structures were the nearest to organic, because they proceeded most

directly and consistently from their cause, a need of the occupant. Then, with the growing complexity of the occupant, the unbridged initial fault was lost to view. The checks that sprang from it spread. Later cementings only divided the stress and forced the crazing further. Finally the isolated fragments of architecture's structure became the platforms of Style, the worst enemy of Organization.

Style is the propounding of an incidental unit as the universal measure. Just because the advocate of a style is cut off from the whole, he assumes his particular propensity to be the bricks of which the whole is built. One style may best suit one need, but only all styles can suit all needs. Since no two needs, more than any two men, are exactly duplicate, style is the stamp of creative poverty.

At this time we are confronted with the shame of finding ourselves out. Inconsistency on every hand has led to dismal confusion. Arbitrary canons and coinage, we find, cannot help us. We must, and we will, migrate to the only path out of the maze: *the way we came*. We must return to the simple law of Organization, Consistency, and practise it by associating only those things whose relationship can be found in a common cause.

Our structures will then proceed logically from an organized unit of cause and materialize as organic forms of theory and substance.

In summary of the first phase of our argument, recognition of the Organic is not its achievement, neither is appropriation of its forms. It is not modernism, classicism, nor any other "ism." Yet it is older than all, for it has been responsible for the elements of logic in each. It has been submerged in proportion to our conflicts; literally lost in the rift between Science and Art, because Organization is unification. We must therefore learn the relationship of every fundamental to its fellow before we attempt to relate them.

The naked knowledge that "it is all one" must be our assurance and encouragement that such relationship can be determined.

PROCEDURE

Our next step is to show how the principle of Organization applied to Architecture will produce an Organic Structure. Also that it is the most direct way to that end.

Consistency first requires a definition of the beginning and end of architecture.

Consistency requires a cause to produce an effect. On delving deeper we find that any cause is the effect of a still more elemental cause. The process is one of constant refinement. The present material effect of a process is only the stage of development that time has permitted its cause to reach. That material effect may be the nucleus of further development, while still the complex effect of a prior cause.

Consistency requires that a cause continue to generate effects until it is overcome, or limited, by a counter cause. By reason of its relation to the generating nucleus, this counter-cause can be likened to an envelope resisting the expansion of the nucleus.

But consistency with the idea that there is only *one* fundamental cause forces us to the conclusion that the only permanent envelope to a generating nucleus is its *rate of progress*.

Architecture, to adopt more tangible terms, is the product or effect of the nucleus, Man, and the envelope, Economics.

The often forgotten fact that Man, in the generalizing sense, or the occupant, in particular, is the sole creative cause of the house is the first result of this reasoning. The second conclusion is that architecture cannot grow, at least in conception, otherwise than outwardly from the occupant, and will thus grow in accordance with its rate of growth, Economics.

A definition of Economics may serve to make plainer the allusion to it as a rate. It is definable as the sum of methods by which conditions of life may be maintained or improved. It represents the speed with which natural and social obstacles to living are overcome. Consequently it is the tangible evidence of Man's rate of progress.

The only obstacle Man cannot conceivably overcome is his own "slowness."

Thus an analysis of Man, alone, must disclose not only the nature, but the relationship, of every factor contributing to a logical architecture. Then a co-ordinating agency can design that which the occupant would cause.



If the analysis of Man is confined to the simpler, purely physical, factors we see him as a parcel of wants impelled in pursuit of satisfaction.

Elementally these wants, instincts, appetites or motives are really few and simple. They

seem entirely reducible to hunger and thirst, respiratory, thermal, recuperative and erotic appetites. They may even be reduced to the major underlying motive, perpetuation of well-being. But these few motives are the fulcrum upon which the ponderous pendulum of society swings. The smallest inconsistencies there will cause wide eccentricities in the arc.



The nature of the want is detected by innumerable subjective sensory endings, like antennæ, located throughout the body. These may not operate consciously. Association compounded upon association may result in the want reaching consciousness in terms of environment, society, and habit so remote from its instigation as to bear it no apparent resemblance. But the brain or nerve centre has, in the process, transformed the want into a sort of motive force.

The motive enlists the seven or more types of objective perceptors that are in contact with the source-of-supply of satisfaction. These are the visual, auditory, olfactory, gustatory, tactile, thermal, kinesthetic mechanisms. If the means of satisfaction is at hand, they report back to that effect, and the motive is redirected to attainment under their guidance. If the means is not immediately evident a "trial and error" course is adopted until such means is hit upon.

This may not take place outwardly but by what, through lack of space, we shall have to call "reasoning," with "experience" to guide. Rambling as the detour may be, the process will eventually reach one of the elementary want satisfactions, and the motive actuating it cease.

Such a purely physical analysis of Man is common knowledge to the physiologist. With the physiologist's prescription in quantitative form, the specializing engineer can offer precisely the degree of satisfaction a man requires of his environment.

These physical means of satisfaction that comprise the skeleton of Organic Structure are, consistent with their causes:

1. Devices for promoting ingestive and metabolic functions.
2. Air-conditioning devices for promoting respiratory and thermal functions.
3. Physical accommodations for promoting rest and action.

4. Devices for promoting efficiency of sensory functioning, such, principally, as lighting, acoustics, and textures.

From the specializing engineers, these means of satisfaction proceed into applied form. But—and hereon depends the consistency of the whole organic structure—*these satisfactions must be jointly applied in the same proportions of respective importance as their causes, man's physical wants.*

The comprehensive understanding, from physiology to applied engineering, entailed in such a technique of co-ordination, is our first argument for a specializing agency, the Organic Technician.



So far, we have traced the logical growth of Organic Structure to the limits justified by elementary physical causes. We have avoided all complicating esthetic considerations until certain of their relationship to the physical.

The relationship of the physical and the esthetic is found to exist, and its character disclosed, by a second analysis of the nucleus, Man.

This time our method involves procedure from physiology to elementary psychology. Its logic is the most important phase of the argument, because it indicates a sound method of bridging the worst fault of architecture—loose association of Science and Art.

The workings of the complete neural system have been very logically reduced to physical processes by the late Doctor Leonard T. Troland, psychologist, and others. Their well-substantiated "Dynamic" theory of psychology is, in brief, much as follows:

All primary, subjective and objective, neural activity is accompanied by a secondary activity. This latter is a constant cross index of advice, favorable, neutral, or unfavorable, and respectively termed positive or negative.

Since the energy exciting the neural system has been found to abide by certain of the laws governing electricity, let us adopt an electrical analogy. Let us assume that a transformer having two windings is coupled to two circuits. The first of these is an open circuit excited by external currents. The second is a closed circuit with a fixed current, such as a battery. But this second circuit is so reflexed that its excitation is partially "fed back" into the first circuit. Now an external current may be of two types. First, that which is in phase with the current of the battery circuit, in which case the "feed-back"

coupling will cause the intensity of the entire excitation to build up with time; second, that which is of opposite phase to the battery current, in which case the fed back excitation will tend to suppress or cancel the external current.

Let the fixed battery current represent the normal psycho-physiological balance of man. External currents represent physical needs (deflections of the organism from its median of balance). The circuits represent neural channels and the transformer represents the brain or nerve centre.

Then primary neural activity is accounted for by the first and second circuit; secondary neural activity by the reflex coupling. The circuit would appear to remain inactive except while stimulated by external currents, our familiar wants. Then the augmented or suppressed activity would be of intensity proportional to the time it lasts.

But in our electrical analogy we inevitably have to allow for more or less core-saturation of the transformer. This means that extended or exceptional excitation of the same phase will cause an *opposite phase* charge in the presumably inert transformer. This will discharge back into the circuit, suppressing its cause while that lasts. Its slower rate of discharge may result in its outlasting the cause. In that case it would appear as a favoring or suppressing tendency for later external currents, favoring their opposite phase and suppressing their similar phase. After the cause had ceased it might also appear as an independent internal or tertiary excitation of opposite phase to its cause.



Our complete neural systems act very much in this way. Both favorable and unfavorable primary and secondary intensity builds up to a certain level and then suffers a relative decrease when the time is further extended, exactly as though opposed by a tertiary activity that has been slower in accumulating.

This accounts for the four characteristics of Man that comprise the esthetic wants:

1. Acclimatization or decay of interest in the attendant.
2. Antipathy for the customary.
3. Favoritism for the different.
4. Appreciation of the abstract.

The first three either accompany a physical cause or follow closely enough upon its heels to be analyzed through such cause. But the fourth may be the accumulated aftermath of many

physical causes, and too remote from them to be traced directly. Yet it is the most important to us, because it represents non-physical, or artistic, wants.

It must be understood that this fourth effect, after discharging into the neural system, excites it in the same manner as a want, but since it originates in the brain, or the transformer, is untraceable to subjective cause and must remain an *unnamed*, or *undiscriminating*, want.



The more promptly our wants are satisfied, the more insistent becomes the unnamed, esthetic want.

Thus a relatively constant dissatisfaction is the basic force motivating Man, our nucleus of Organic Structure. If it were not so he would merely fluctuate about his median of well-being. But—and this is the most encouraging conclusion—as it is he is constantly impelled to something better and *even the median is pulled to a higher level*.

The obvious conclusion is that the physical and the esthetic are definitely related; the former is the cause of the latter effect. *The time involved in deriving physical satisfactions is literally the measure of the esthetic want.*

We have only to find out what will satisfy an esthetic want.

The esthetic want, being an after-effect, may be making its demand for satisfaction in the total absence of physical want. Hence a physical satisfaction would be an excess, unfavorable and unsought. The only satisfaction that will meet esthetic requirements is one of physical appearance but no physical effect. It must be as purely mental as the want. Only promotion of others' well-being, and esthetic self-enjoyment, meet the conditions.

Benevolence and art are the means of esthetic satisfaction.



This second analysis of Man is within the accepted realm of the psychologist. His findings are the material assurance that the work of the designer and artist are not merely related, but essential to complete Organic Structure. Such findings also conclusively indicate that the importance of esthetics, in relation to the physical, will be apparent in analysis of the time intervals

involved in physical satisfaction. Furthermore, that esthetic want may be controlled by regulation of such time intervals.

The esthetic means of satisfaction that clothe the skeleton of Organic Structure may now be reduced to applied form as:

1. Devices for temporal change of environment.
2. Devices for mental, sensory, and physical recreation.
3. Artistic presentations.

These must be applied in proportion to the intensity of the esthetic want, as measured through physical activities, and thereon also depends the consistency of the entire Organic Structure. This carries the understanding required of the co-ordinating agency from physics through to esthetics.



In summary of the second phase of our argument, we have shown that only an architecture proceeding from the occupant can produce a logical environment for him—Organic Structure. If this is the only logical procedure it must be the most direct. By progressive analysis of the occupant we have shown that, from the physical to the esthetic, from Science to Art, such structure can grow consistently because a definite relationship exists. We have shown that the structure must comprise physical satisfactions as required by physical wants, and esthetic satisfactions as required by esthetic wants. These must be co-ordinated in structural effect as they are related in human cause. We have made obvious the necessity for a co-ordinating agency and the extent of his requirements.

PRACTICE

It only remains for us to point out our reasons for saying that the technique of Organization is the immediate privilege of the architect.

By necessities of space we have so far generalized in treatment of the subject. But, as we have said that no two men are exactly duplicate, so, in practice, no two organic structures are likely to be the same, for each is the effect of its cause, the occupant.

The first move in architectural practice of Organization is to segregate the occupant, collective or individual, for particular analysis. The analysis is carried out in consultation with a physiologist and psychologist. Their conclusions become the property of the specializing

engineers. The products of these are turned over to the designer and artist. When the housing stage has thus been reached, the structural engineer formulates support, and the architect designs the mass.

But we have not forgotten the envelope, Economics. The requirements of the outer world and their social reflections in the occupant combine as the result of a second analysis of Man in general. Then reversely down the line of development outlined above these specific restrictions are applied.

This is the order of practice whereby the law of Organization, Consistency, may achieve an Organic Structure. It is neither impractical nor remote. It is both logical and available to the architect.

In "The Neglected Sense," the first article of this series, the importance of consistency in psychological considerations was brought out by a discussion of acoustics.

In "Fair Weather," the second article, the importance of consistency in physiological considerations was brought out by a discussion of means of maintaining the body's thermal balance through air conditioning.

In "Material Vision," the third article, importance of consistency through physical considerations was brought out by discussion of the reactions of the eye to light and color.

In each of these consistency alone has indicated logical improvements.

The purpose of this article has been to prove the importance of consistency in the co-ordi-

nating of each phase of every field for production of a logical architecture.

The reader, who may now consider applying the theories advanced in the first three articles to the same interior, will realize that Consistency has acquired a tangible, useful meaning. He will have a real conception of the possibilities inherent in Organization.



Note.—The author wishes to express his gratitude to those who, by generous act and encouragement, have been much more than sources of reference: Erastus Root St. John, M. Am. Soc. C. E.; Vesper A. Schlenker, acoustical research engineer; Harold L. Hadden, electrical engineer; Wallace D. Van Etten, architectural designer; Perry West, air-conditioning engineer; Dr. Leonard Greenberg, School of Public Health, Yale University; Dr. C. P. Yaglou, Professor of Industrial Hygiene, Harvard University; Dr. W. J. McConnell, A. S. H. V. E.; J. W. Barker, Dean, School of Engineering, Columbia University; H. E. DeAndrade, illuminating engineer; A. L. Powell, Chairman, I. E. S. Committee on Light in Architecture; Alston Rodgers, illuminating engineer; Dr. C. E. Ferree, Wilmer Ophthalmological Institute, Johns Hopkins University; Dr. J. A. Jastrow, psychologist, New School of Social Research; Dr. L. P. Herrington, psychologist, John Pierce Foundation, Yale University; Dr. D. A. Laird, Director, Psychological Laboratory, Colgate University; Thomas Wilfred, artist in light; Gifford M. Ryder, artist; Edna M. Treadwell, medical technician.





Photographs by Peter A. Juley & Son

The Adventures of Huckleberry Finn

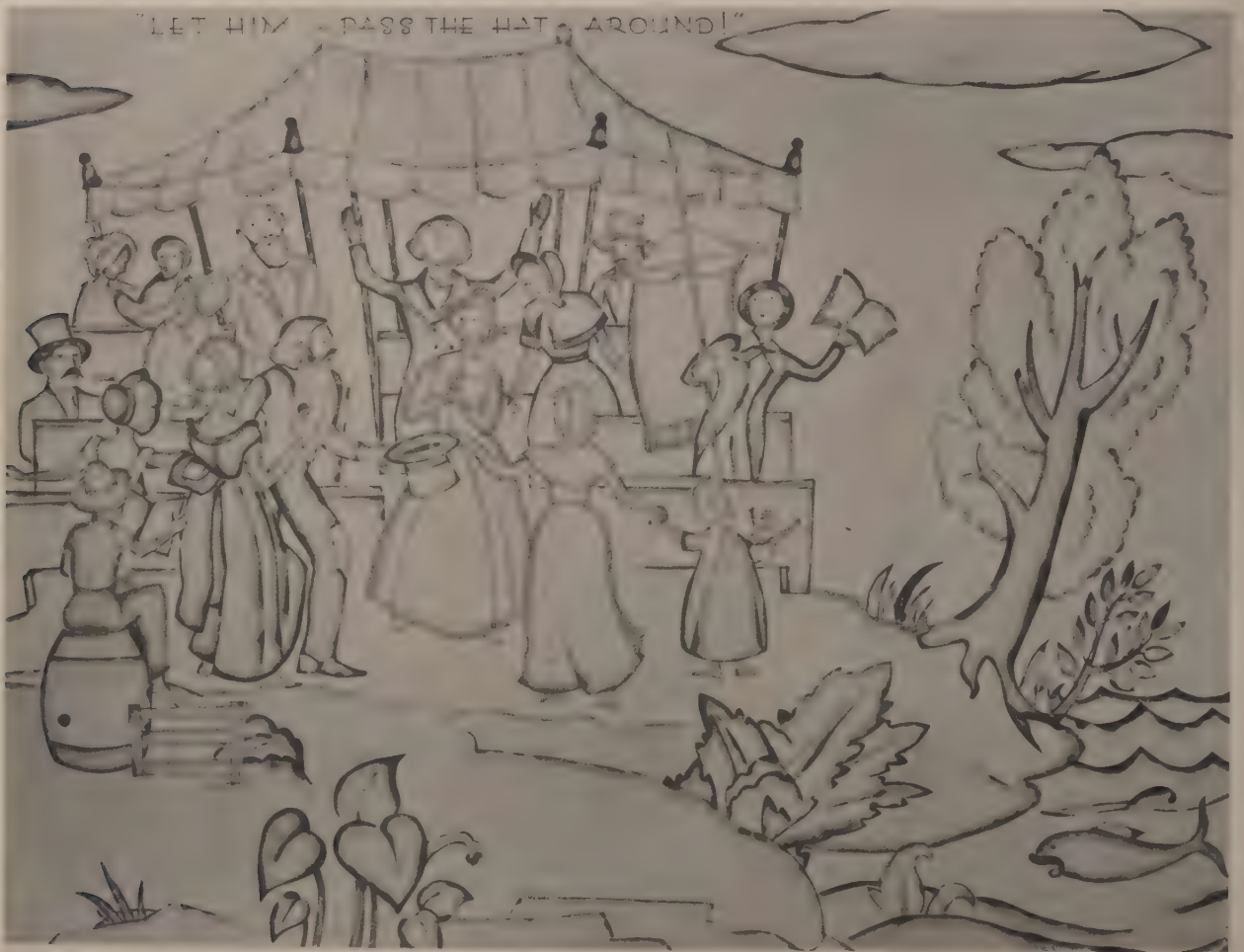
Painted by D. Putnam Brinley

Mr. Brinley's murals are on the walls of a cafeteria in the new Home Office Building of the Metropolitan Life Insurance Company, New York City, for which D. Everett Waid and Harvey Wiley Corbett were the architects. Mr. Brinley had a large area to cover in a short time, and developed a new technique involving the use of cutouts, along the edges of which he painted with an airbrush. The series is marked by a freshness and naïveté that is evident from the portions here reproduced, handicapped as they are by our failure to reproduce the color. The incident represented above is: "The king and the duke got out a couple of long swords made out of oak laths and begun to practice." At the bottom of the page, "By the living fingo, here's the bag of gold on his breast!"

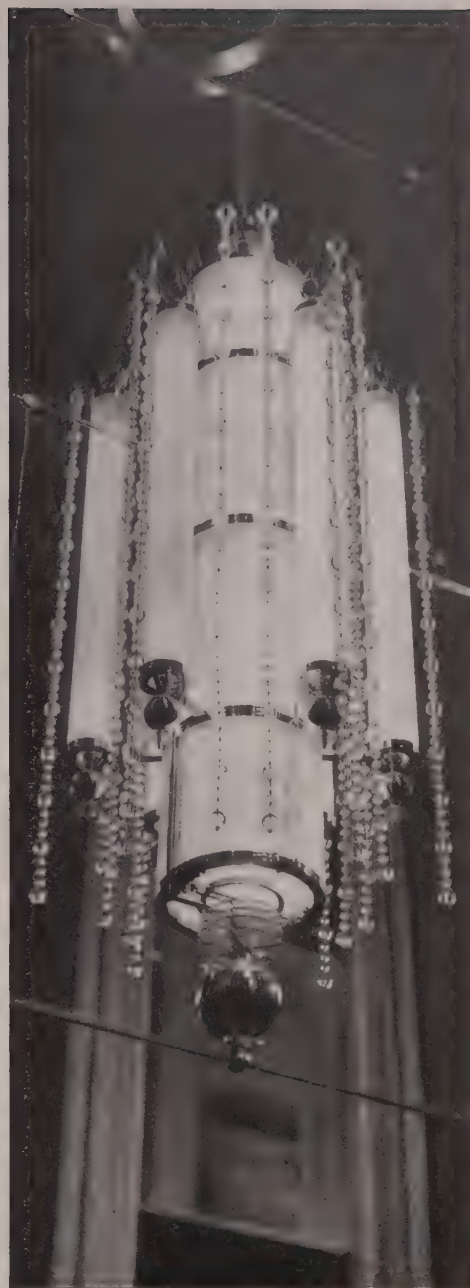
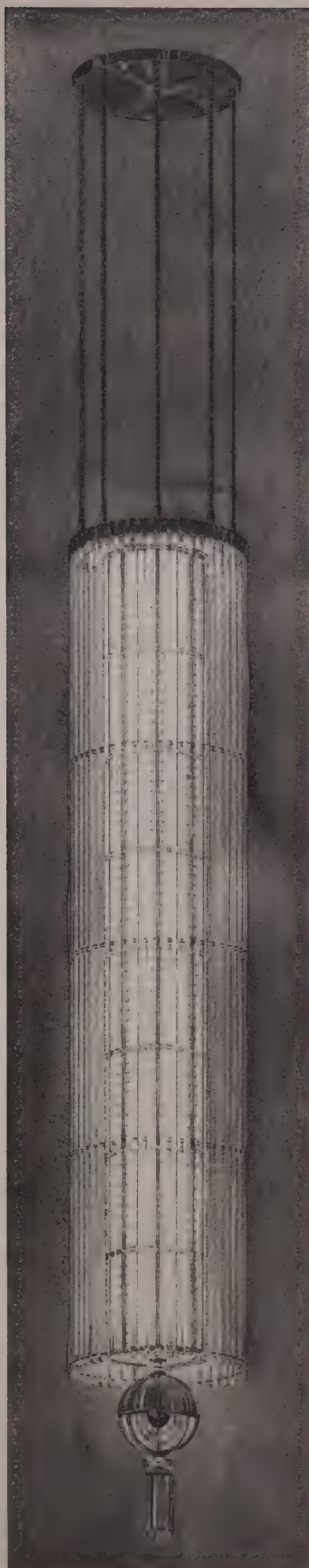
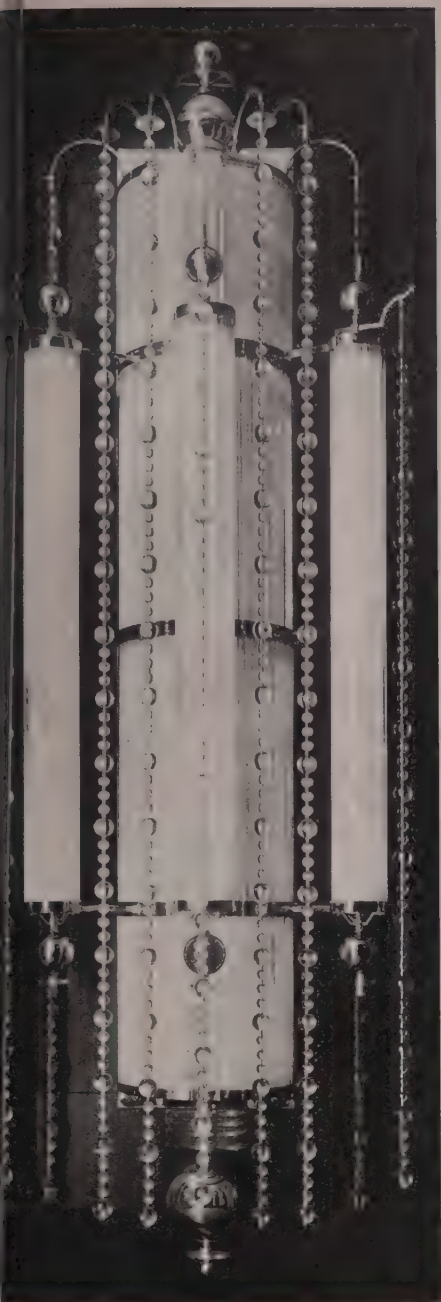




"It's you at last, ain't it?"



◀ ARCHITECTURE ▶



Photograph by Samuel H. Gottscho

Lighting Fixtures

In the centre, one of the large chandeliers in the grand foyer, International Music Hall, developed by the architects: Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Foulhoux, in collaboration with Edward F. Caldwell & Company, Inc., who executed the work. The total length of this fixture is about twenty-nine feet, and there are many intricate provisions, neces-

Rockefeller Center

sarily, for safety from falling and from glass breakage.

At left, one of the side-wall bracket fixtures in the main foyer, and at the right, the same fixture in place, engaged on a mirror surface. There is a Viennese sparkle in this fixture, modern and functional as it unquestionably is in its combination of heat-resisting glass and chromium-plated metal



The new Parliament Buildings for Northern Ireland, built of Portland stone on a granite base. Sir Arnold Thornely, architect

Architectural News

Preliminary perspective of the proposed United States Customs House and Appraisers Stores Building, to be erected at Second and Chestnut Streets, Philadelphia. Ritter & Shay, architects



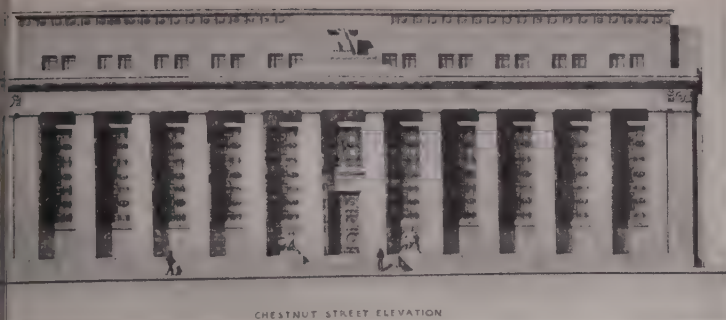
At left, one of the two new wings of the Toledo Museum of Art, recently opened—a bequest of the late Edward Drummond Libbey. Above, the 1500-seat concert hall, a modernized version of a Greek open-air theatre. Edward B. Green & Son, architects

Proposed Federal House of Detention, which is to be erected at Sandstone, Minn., the design for which was won in competition by Ekman, Holm & Company, architects and engineers.



A perspective drawing of the Insurance Company of North America Building, in lower Manhattan, now in course of construction. Shreve, Lamb & Harmon, architects





CHESTNUT STREET ELEVATION

Steel construction has been begun on the new Federal Reserve Bank building, 10th and Chestnut Streets, Philadelphia, which will be an addition to the present structure. Paul P. Cret, architect

Photographs

A preliminary perspective of the United States Legation and Consular Building, Ottawa, Canada. Cass Gilbert, architect. The drawing was made by John T. Cronin



The Hall of Religion for the Century of Progress Exposition at Chicago, to contain exhibition space for various denominations. Thielbar & Fugard, architects



Above, the new home of the Worcester Art Museum, Worcester, Mass., William T. Aldrich, architect. Below at the left, is a view in the interior court of the same museum



Munger Hall, a new dormitory being built at Wellesley College, and to be run on a co-operative basis. William T. Aldrich, architect

BOOK REVIEWS

HARVARD CITY PLANNING STUDIES. IV. Urban Land Uses. Amounts of Land Used and Needed for Various Purposes by Typical American Cities. An Aid to Scientific Zoning Practice. By HARLAND BARTHOLOMEW. 174 pages, 7 by 9¾ inches. Illustrations from drawings. Cambridge, Mass.: 1932: Harvard University Press. \$3.50.

Here is another and particularly timely volume in the Harvard City Planning Studies. Mr. Bartholomew has a real genius for probing into the facts and trends of city development, on which facts many national schemes of city planning, or even mere zoning, should be based. The book, indirectly, is a powerful argument for making a city plan based on facts first, and art afterwards.

ROME OF THE RENAISSANCE AND TODAY.

By SIR RENNELL RODD. 304 pages, 6½ by 9¾ inches. Illustrated with drawings by HENRY RUSHBURY. Printed in Great Britain. New York: 1932: The Macmillan Co. \$5.

Dealing in the main with Renaissance and post-Renaissance Rome, and more particularly with the rapid and drastic changes in the city during the last fifty years. Mr. Rushbury's drawings are well worthy of a place in the architect's office for themselves alone, even if they were not accompanied by Sir Rennell's authoritative text.

ENGINEERING: A Career—A Culture. A Message to Young Men, to Parents and Teachers. 61 pages, 6 by 9 inches. Illustrations from line drawings. Pamphlet binding. New York: 1932: The Engineering Foundation. 15 cents.

A pamphlet prepared by the Education Research Committee of the Engineering Foundation, outlining the professional functions of the engineer, his various spheres of action, his training, his obligations, and his rewards.

COLUMN CURVES AND STRESS-STRAIN DIAGRAM. By WILLIAM R. OSGOOD. 12 pages, 6 by 9 inches. Illustrations from graphs. Research Paper No. 492. Pamphlet binding. Washington: 1932: U. S. Department of Commerce, Bureau of Standards. 5 cents.

THE VILLAGES OF ENGLAND. By A. K. WICKHAM. Foreword by M. R. JAMES. 52 pages, 6¾ by 9 inches. Illustrations from photographs and line drawings, with large geological map. Printed in Great Britain. New York: 1932: Charles Scribner's Sons. \$3.75.

A companion volume to Basil Oliver's "The Cottages of England," and a well-rendered survey which divides England into "Chalk and Clay," the limestone belt, the western midlands, the southwest, and the north, with particular reference to

the materials which the local builders used, and the types which arose therefrom. The illustrations are numerous and beautiful.

CHURCH ARCHITECTURE: Building for a Living Faith. By FRANK BRANNACH. Preface by JOSEPH HUSSLEIN. 266 pages, 5¾ by 8½ inches. Illustrations from photographs and drawings. Milwaukee: 1932: The Bruce Publishing Co. \$3.

The author writes for the priesthood and clergy particularly, as well as for the architect and layman, sketching the main outlines of ecclesiastical architecture in the past with emphasis upon the necessity of utilizing trained architects in our church building of the present day.

RECOMMENDED MINIMUM REQUIREMENTS FOR SMALL DWELLING CONSTRUCTION. Report of the Department of Commerce Building Code Committee. 107 pages, 6 by 9 inches. Illustrations from diagrams. Pamphlet binding. Washington: 1932: U. S. Department of Commerce, Bureau of Standards. 10 cents.

A revision of a report first issued in 1922, brought up to present-day practice.

THE CATHEDRAL OF PALMA DE MALLORCA. An Architectural Study. By RALPH ADAMS CRAM. 16 pages of text and 24 pages of plates, 9¾ by 12¾ inches. Illustrations from photographs and measured drawings. Cambridge, Mass.: 1932: The Mediæval Academy of America. \$5; to members of the Academy, \$4.

Doctor Cram laments the lack of authoritative material relating to this, "one of the most original and significant of Gothic cathedrals, as well as one of the largest." The measured drawings—one regrets that these could not have been reproduced at much larger scale—were made by Thomas T. Waterman, Thomas Phillips, and Charles Walsh.

HORIZONS. By NORMAN BEL GEDDES. 293 pages, 8 by 10¼ inches. Illustrations from photographs and drawings. Boston: 1932: Little, Brown & Company. \$4.75.

Norman Bel Geddes is so facile in his means of presentation that the present reviewer, at least, is instantly put on the defensive. Whether the design is for an air liner, a bathroom scale, or an aerial restaurant, the presentation is always so immediately convincing that one feels an obligation to probe further into the skeleton and the intricate functioning of the creation. Unfortunately, too few of these creations of his have been executed. The refreshing stimulation of Bel Geddes's designs are largely due to his uncanny ability to view the problem objectively and with a lack of prejudice impossible in those more intimately concerned with its everyday study. The book, as its title indicates, is a look into the future over a foreground of varied achievement.



HOWE & CHURCH, ARCHITECTS

Providence National Bank, Providence, R. I.

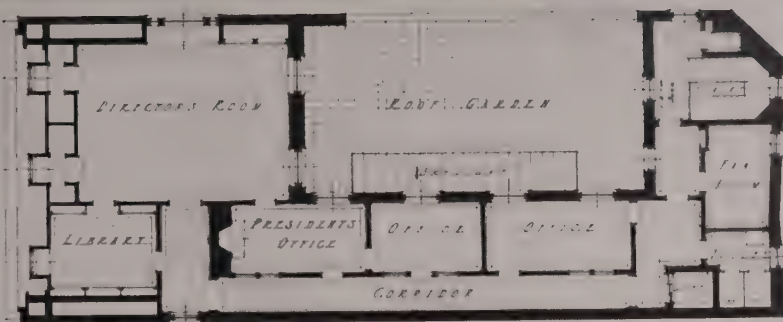


The exterior of the bank is of red brick with white marble trimmings, roof of black slate, and balcony of cast and wrought iron. On account of the narrow street on which the building stands, it is difficult to photograph; for that reason the exterior is shown by means of the architects' perspective.

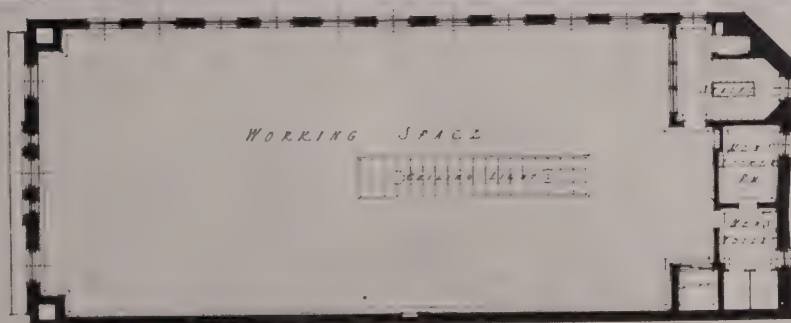
In the banking room the floor is of marble, the woodwork of teak, and the metal railing on top of the low counter screen is of dull bronze

The murals in the main banking room, several panels of which are reproduced on page 160, represent the early industrial and commercial history of Providence. They are by James Monroe Hewlett, assisted by Charles Gulbrandson

THIRD FLOOR PLAN



SECOND FLOOR PLAN

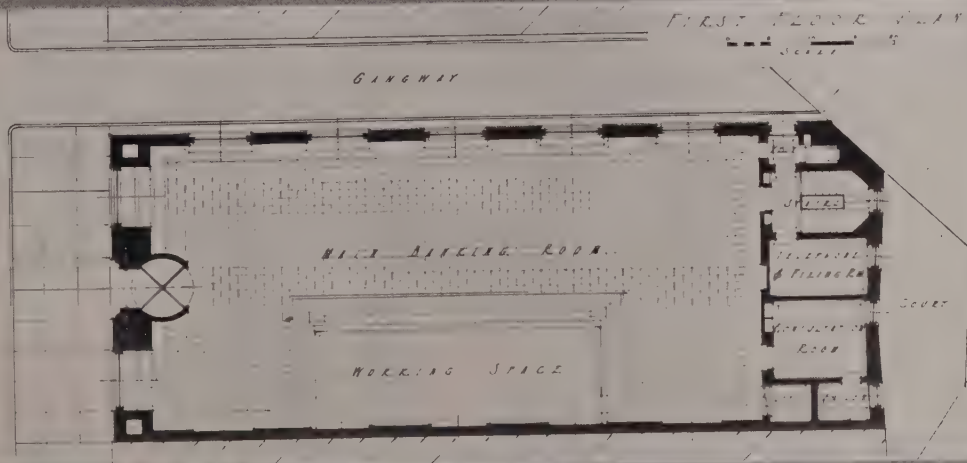


BASMENT PLAN



FIRST FLOOR PLAN

WINCHESTER STREET



Plans of the first floor, basement, second floor, and third floor

PROVIDENCE NATIONAL BANK, PROVIDENCE, R. I.

HOWE & CHURCH, ARCHITECTS



*Murals in the main banking room, Providence National Bank, Providence, R. I., painted by
James Monroe
Hewlett, assisted
by Charles
Gulbrandson*



Monday, January 2.—The papers are out with a scheme for an elevated highway around Manhattan, backed by all the weight of such names as those of Magonigle, Cross, Tilton, Kahn, Levi, Waid, and others, which really should be sufficient guarantee to make one cheer for the scheme without further examination. And yet I cannot help feel that this scheme, good as it is, completely ruins Battery Park, which, even under the present régime of neglect, is a feature of Manhattan that seems worthy of preservation. I should think the elevated highway might cross the lower end of the island a little farther up-town, say near Canal Street, leaving the old Battery undisturbed. We have a habit, it seems, of reviling those who built elevated roads in the past generation, tearing them down whenever it is possible—and then conceiving new and more elaborate elevated roads for this generation to build.

Wednesday, January 4.—Robert D. Kohn tacks a picturesque title to the new steel houses resulting from large-scale production, "zipper houses." He points out, as others have done, that the hope for better housing does not lie solely, nor even in large part, in decreasing costs of production. Some of the houses which have sold in the southern section of Brooklyn for about \$5,200 actually cost in work and material \$1,900, though the profit on these houses was not inordinate. The difference was swallowed up by other elements, by carrying charges, streets, financing, and so forth.

Friday, January 6.—Evidence is accumulating to bear out the contention of many leaders that we have been piling up a real shortage of housing space. Just as during the war we dammed up a reservoir of housing needs which burst upon us afterwards, so now we have built up another reservoir of large proportions. Here are the approximate totals of building in round billions, showing what has been happening. 1925, $6\frac{1}{2}$; 1926, $6\frac{1}{2}$; 1927, $6\frac{3}{4}$; 1928, $7\frac{1}{4}$; 1929, $6\frac{1}{4}$; 1930, 5; 1931, $3\frac{1}{2}$; 1932, $1\frac{1}{2}$.

Saturday, January 7.—Apparently President Hoover's rearrangement of Federal bureaus may fail of acceptance. Nevertheless, some such scheme as he has proposed for a division of public works seems logical, if not inevitable. This means that a division of public works would bring together the work now done in the Office of the Supervising Architect of the Treasury Department; of work on rivers and harbors heretofore directed by the Army Engineering Corps; and public roads, at present carried out by a bureau of the Department of Agriculture. With the consolidation of the government's building activities there would be still greater opportunity of utilizing public building



The Editor's Diary



as a balance wheel in our national economic progress.

Monday, January 9.—Lucian E. Smith, one of those architects who, having at the moment nothing in particular strong enough to hold him here last summer, took a car with him abroad for the purpose of adding to his knowledge of Europe, and particularly of rural England. He came in today, and is most enthusiastic about Liverpool Cathedral, having spent a whole month in its otherwise rather drab city, seeing the Cathedral at all hours and in all lights. His enthusiasm was mainly for the interior, which to him is second only to Chartres in its spiritual uplift. I was rather surprised to learn that the stone of which Liverpool Cathedral is built is a decided pink, which weathers to a brownish gray.

Wednesday, January 11.—The New York Chapter, American Society of Landscape Architects, is trying to move the national wheel off its dead centre by offering:

"To every property owner who will give men, now unemployed, work on his property at the rate paid by the local unemployment bureau, to the amount which would pay ten, or more, men for six days, a member of this Chapter will give a visit of consultation or supervision for the direction of the men's work without charge, except for necessary travelling expenses, and will give an additional visit for every similar amount so expended."



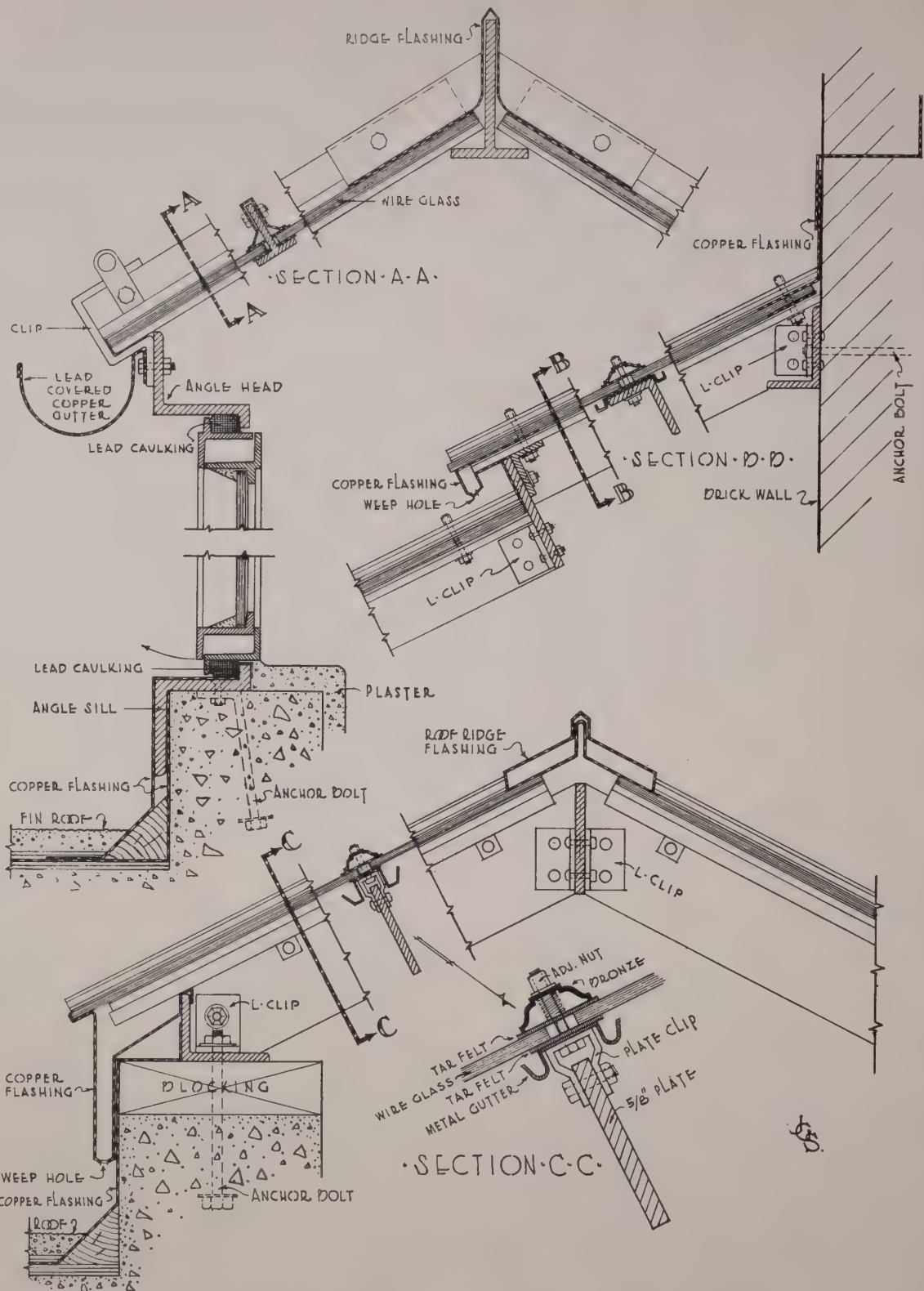
Thursday, January 12.—W. Duncan Lee up from Richmond, Va., telling me of the joy he had had in working for the past three years on the rebuilding of

Carters Grove. The unending series of revelations, coming almost daily, concerning the origins, the idiosyncrasies of workmen, the unusual uses of materials, in connection with this James River mansion, built early in the eighteenth century, must be one of the most pleasurable experiences that can come into an architect's practice. The interior woodwork of Carters Grove is thought by many to be the best in Virginia, and the problem of maintaining it undamaged when subjected for the first time in its history to artificial heat, was one of the major problems. Carters Grove, until the present renaissance, never could have been really warm and dry inside of its thick brick walls. Mr. Lee hopes to avoid shrinkage and cracking of the great pine panels through unusual care in insulation, in concealing amply protected radiators, and, perhaps what is best of all, by maintaining the temperature for a year or more at not over sixty-five degrees—a price the owners are quite willing to pay. Incidentally, Mr. Lee succeeded in equipping the old house with seven bathrooms and a complete heating plant, without removing any of the panelling. Once removed from its original supports, panelling is rarely, if ever, returned intact.

Friday, January 13.—Harry F. Cunningham, professor of architecture, University of Nebraska, is going to conduct a small and select group of young architects, artists, and other human beings about Europe next summer. The party sails from New York on June 17, going to Liverpool first, to Chester, to Oxford, to London, to Winchester, and across the Channel from Southampton. At Le Havre they take a big bus and circle around part of France, including five days in Paris under the additional guidance of some of the local architects, who will show them all the new sights—and perhaps some of the old ones. Thence the party has a five-days' rest and conference at Oetz in the Austrian Tyrol, passes on down the Rhine, crosses Belgium and sails back from Antwerp. Gene Robb, of 55 West 42d Street, is managing the business end, and the cost is \$400, all of which is almost as good as reading next year's seed catalogue.

Saturday, January 14.—Here's a crusade I'd like to join. Ely Jacques Kahn is chairman of a committee just organized to awaken the public to a need for better ventilation in railway and subway trains, street cars, buses, taxicabs, and private automobiles. Personally I think if they succeed in improving conditions only in the first two, the crusaders will deserve the thanks of most of the present population and of that to come.

Monday, January 16.—The 1930 census picked up a lot of information, some of which is interesting, some not so much



VARIOUS SKYLIGHT CONSTRUCTION DETAILS.

A SERIES OF WORKING DRAWINGS BY JACK G. STEWART

SCALE: 0 1" 2" 3" 4" 5" 6"

PLATE NO. 34.

so—as for example, how many families have radios. The figures on rents and on values of owned homes are significant. Of the 10,503,386 owned non-farm homes in the United States, the median value is \$4,778—18.1% valued under \$2,000; 33.4% between \$2,000 and \$5,000; 31.3% between \$5,000 and \$10,000; and 15.2% \$10,000 or over. There are more rented non-farm homes than those owned—12,351,549, for which the median rent is \$27.15. These figures vary widely for the State, the median rent in three Southern States being under \$10, while in New York it is \$41.94. In spite of the inroads made in recent years by the apartment-house, 76.4% of all American families still live in one-family dwellings. Here is an interesting comparison—the percentages of home ownership, classified by color and nativity, are as follows: for all families, 46.8%; for native whites of native parentage, 48%; foreign and mixed parentage, 51.6%; foreign born, 51.8%; and Negroes, 23.9%. Homes having telephones run from 84.2% in Iowa to 3.8% in Louisiana.



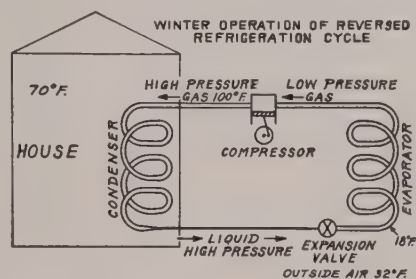
Tuesday, January 17.—I had the pleasure of seeing today Thomas H. Benton's murals in one of the upper rooms in the Whitney Museum of American Art. It really does not seem proper to call these murals—to my mind a mural is a quiet, unassuming background that is rather flat in color and not at all insistent upon the story, if any, it has to tell. Benton's paintings, called "The Art of Life in America" do not fit this definition of a mural. He has a lot to say, and says it boldly and convincingly. The paintings are called, "Murals for a Reading Room." I doubt whether anyone could read in that room—the paintings are far more vociferous in demanding attention than any reading matter could possibly be. One who goes into the Whitney reading room will do well to leave all printed matter behind. Another traditional characteristic of the accepted mural type is scale, and here again Benton has jumped to a scale that makes the room itself seem puny and inadequate. The paintings, if they have the strength of appeal for others that they had for me, will eventually demand another room, an adequate room.

Wednesday, January 18.—Edwin B. Morris, Editor of *The Federal Architect*, paid us a luncheon visit at The Architectural League today. Even living in the midst of the steadily growing mass of government buildings in the Capital, and thereby being able to absorb their bulk and magnificence gradually as they are being built, he seems to be uncertain as to the ultimate result. Once more I find myself asking whether we are build-

ing another Rome in Washington, a Rome which by reason of its vast areas and overwhelming piles is going to be depressing rather than inspiring.

Friday, January 20.—Thomas T. Waterman, joint author with the late John A. Barrows of "Domestic Colonial Architecture of Tidewater Virginia," dropped in today on the first lap of a trip abroad which will take him to Spain, and finally to dwell indefinitely in Malaga. The island of Majorca seems to have attracted so many artists and architects as a solution of the present problem of living that it is, I hear, becoming overcrowded. The American bar and the contract bridge parties may ruin it in a very short time. Waterman thinks that Malaga, on the other hand, is as yet unspoiled.

Monday, January 23.—The Westinghouse engineers are working on an interesting phase of combined heating and cooling. W. C. Goodwin is directing the research, which has not yet reached a stage where it may be commercially employed. The scheme is shown graphically in the accompanying diagram.



Vapor from the outside evaporator is compressed, thereby raising its temperature. Flowing through the condenser indoors, the gas becomes a liquid, radiating heat. Reaching the expansion valve in the circuit, pressure of the liquid refrigerant is so reduced that it boils, and, in vaporizing, makes the evaporator cooler than the outside air. Heat, therefore flows from the outside air to the refrigerant, and the vapor is again drawn off by the compressor to complete the cycle. The scheme, while seemingly a paradox in that heat is brought indoors from a cool air, seems to be theoretically sound. Since the heat is not generated, but merely transferred from outside to inside the house, there is a high degree of efficiency obtained. The electric current consumed in pumping produces three to five times as much heat indoors as if the same electricity were directly converted into heat. Of course, this system, if sufficiently developed, serves for both winter heating and summer cooling, since the process described above is no more nor less than reversed refrigeration. In the summer the equipment would absorb heat from inside the house, pump it to the outside, and discard it.

Tuesday, January 24.—A. Lawrence Kocher and Albert Frey have gathered together some material for exhibition at The New School for Social Research. The thesis presented is that architecture, both in America and abroad, is in a transition period, to which we will all agree. The material shown in the exhibition compares very instructively an over-decorated theatre interior, for instance, with a clean functional one. The two make the obvious point that it is foolish to overload with ornament surfaces that, if not altogether out of the range of vision, are certainly not the focal point for which the interior was constructed. The comparisons, of which this is but a sample, are convincing, but when further exhibitions fall almost exclusively into the purely functional type of thing—box-like structures of glass and metal—it seems to me that in striving to be functional they lose at least one of the essentials of building, which is beauty. As has been said, it is not enough for a building to satisfy the demands of shelter, light, air-conditioning, acoustics, circulation, sanitation, and the like; it must also satisfy man's demand that he be given a pleasing environment. There are other ways of making this environment pleasing than by overloading most of the structure with meaningless decoration, of course, such as we did a generation ago, but in his present state of development I think it is not achieving a pleasant environment if we merely place man in a box of steel and glass and let it go at that. Architecture is not living up to its name if it is merely a machine in which to live.



Wednesday, January 25.—Dropped in at the Museum of Modern Art to see a chronologically arranged exhibition of Chicago's contribution to modern architecture as developed by Major Jenney, Richardson, Sullivan and his school, Burnham and Root, Holabird and Roche during the period 1870-1910. I think this is the first time that so complete a presentation has been made with the actual photographic evidences of buildings that have long been forgotten, if not entirely overlooked. The story of the illustrations is a graphic history of the displacement of self-supporting masonry walls by the steel skeleton frame and its curtains, a story of such historic significance in architectural history as to deserve being put into a comparatively permanent record between book covers.

Incidentally, Whistler's portrait of his mother is still here, loaned by the Louvre. It is going, I believe, to San Francisco, Toledo, and, for this coming summer, to the Art Institute of Chicago, where it may be seen by visitors to the Fair before it goes back to the Louvre in the fall.



By gilding the principal lead lines of this stained-glass window, the D'Ascenzo Studios and Zantzinger, Borie & Medary sought to emphasize the structural quality of the design, and create an effective decoration, both in transmitted and reflected light. The window is in the chancel of St. Paul's Church, Chestnut Hill, Pa.

Stained Glass for Night and Day

Some Pitfalls in Supervision

By W. F. Bartels

ETAL roofs may be tin, iron, lead, or copper. The superintendent must check the materials to see that they comply with the specification

as to weight and gauge. Specifications for tin or iron often call for painting on the underside, while copper and lead do not. When laid on the roof the sheets, of course, should have a good bearing, so that any subsequent walking on the roof will not bend or injure the metal. If a copper-bearing iron or steel is used, it should bear the stamp of the manufacturer and also one showing the amount of copper contained. Tin sheets should be uniformly coated with tin. Copper, of course, should be the soft variety, leaving the hard copper only for leaders, gutters, etc. The soft sort will suffer much less "fatigue" due to expansion or contraction. Seams that conform to a good specification and conscientious supervision will result in a water-tight roof.

In addition to wood shingles there now are those of metal, asbestos, and various compositions. All of these must be properly laid if they are to perform satisfactorily. Improperly done, the work will cause great distress. In shingling, nails should be used that will not be affected by the weather. And, it might well be added, care should be taken that there is no ground work provided for electrolysis by having copper nails in zinc flashing, nor zinc nails on copper roofing. Then too, copper nails should be distinguished from copper-clad nails, which are really only copper-plated. Zinc flashing should not be allowed to come in contact with a copper gutter or vice versa.

Slate roofs, while now little used in the cities, have not lost their picturesqueness, and are in demand for country and suburban homes. Slate roofs should be well flashed and the superintendent should see that the slates are properly nailed. They must not be left loose nor yet nailed so tightly so as to be squeezed, because this will cause the slate to split when the temperature rises. Obviously the nails must be long enough so that they penetrate the wood at least an inch. The nails should of course be of non-rustable material.

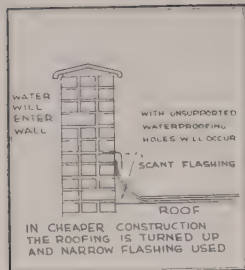
Composition roofs are generally laid on

XXIX. ROOFING AND SHEET METAL

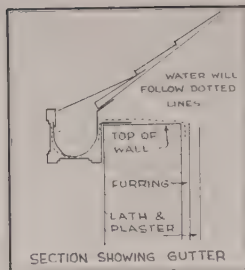
(CONTINUED)

wood or cement foundations. In any case the surface should be cleaned thoroughly before the laying of the roof fabric is started. The superintendent should see that the first layers

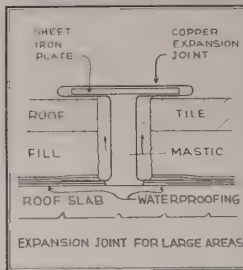
are securely nailed down in the case of a wood base. If the base is concrete it will be swabbed with pitch or tar, and into this will be rolled the first layer of felt. On top of this first layer will be added the others. The number of layers should be carefully checked against the specification, as well as the amount which each sheet should overlap. Successive layers should be well-rolled and brushed into the pitch. If the weather is cold there should be no lengthy expanse of pitch left to cool before the felt is rolled into it. The method generally used is to cut several lengths of felt, swab the pitch on the roof and then "walk" them down. This usually consists of one man taking two or three steps to make sure that the felt is stuck in as many places. Such a method does not insure the felt being in close contact at all points, particularly in cold weather. The argument is then advanced that "the heat from the other layers will penetrate the lower ones and cause the pitch to stick to the felt." The superintendent may convince himself of the folly of this practice if on a cold day he will pull up several layers after they have been laid down thus. However, by rolling the felt out and sweeping it down with a broom, a good job may be obtained. Any spongy roof should be condemned because the chances are all in favor of its eventually leaking. Sponginess is caused by small air-pockets and shows conclusively that the pitch is not binding the sheets of felt together. No felt should come in direct contact with another sheet of felt. If pulled up, individual layers should clearly demonstrate that pitch has been well spread between them. Where the felt turns up against the wall it is well to see that it fits snugly into the right-angle intersection, and does not form a curve against the wall with resultant air space, unless this space is filled with a solid puncture-proof material. Of course, if this curve is desired, blocking may be used to obtain it. Otherwise an unsupported roofing material cove will be a certain cause for leaks when some one walks too close to the wall.



Watch the roofing behind the parapet



Look out for unsoldered gutters



A tile roof must have expansion joints

If the roof is to be walked upon the top sheet should present a tough, wearable surface. If slag or gravel is used, a final thick layer of pitch is the usual prescription. If the roof is flat and tile is to be used, the superintendent must see that the proper number and kind of expansion joints are used. Expansion joints should be used around the entire edge of the roof, and of course no area greater than four hundred square feet, nor a distance longer than twenty-five feet, should be laid without a proper joint. After the tile has been laid this joint will be cleaned down to the pitch and a good grade of pitch or a stiff mastic used to fill the voids. These joints will take care of the usual roof size, but if a large area is covered it is better to make larger joints of metal as shown on the accompanying sketch. The superintendent should inspect the laying of the roof tile closely. He should have the day's work to end on a beam, or preferably on an expansion joint. If this is not done a noticeable crack will show up later where each day's work was stopped—and there will probably be a crack showing up along the beam line anyway.

A fill to which a topping is added is often put down for the tiles to be laid upon. The screeding of this topping must be checked to see that there is enough pitch and that it is in the proper direction so that the water will flow off properly. If cork or other similar material is used for insulation it must be laid smoothly and be all of uniform thickness. Failure in this respect will result in small pools forming on the roof after a rain. When the final check-up is made the roof should be looked over for puddles and for any other evidence that the roof does not drain properly. Such places can generally be discovered even several days after a rain, as the dirt and sediment is still visible even though the water has evaporated. Chipped or cracked tile should of course be removed and replaced with perfect ones.

Flashing is one of the most important items in a building and yet its entire execution is often left dependent upon the tinsmith's ability and integrity. True, this man may be experienced and know how to do his work thoroughly, but it seems a long chance for a superintendent to neglect this important supervision. Flashing may be zinc, galvanized iron, copper, lead, and, on the more expensive jobs, lead-coated copper. The latter has an added advantage of protection against the acids and gases prevalent in the atmosphere of large cities. Lead more nearly matches gray stone work, preserves its original color, and prevents copper salts from discoloring the stone work. Where the top of a side-walk vault is flashed to a building, scrupulous attention must be given to the work. The flashing must be well attached to the waterproofing fabric, and the metal run through the wall and turned up on the inside of the wall at least three inches above the top of the finished sidewalk. In fact, turning it up five inches will do no harm. The tinsmith is prone to regard such a margin as a waste of money—to turn up flashing to that height when the water will more readily go under or over the saddle of a door if present, rather than flow uphill over a three-inch turnup. Also, when the flashing is being run, there is generally no finished sidewalk laid, by which the amount of flashing turnup may be judged. Hence, it is better to have the flashing an inch or two above the required height than to have it below the top of the sidewalk. Then too, it is much more satisfactory, if there is a leak, to know that you must look for it at a door opening, rather than to tear out many running feet of decorated walls before discovering its origin. It is always advisable to use a soft metal for flashing, since there is less danger of its breaking under the continuous bending due to expansion and contraction. If the superintendent is "on the job" and watches the details carefully there is no excuse for a leak at the saddle of any door. But if there is, it is a sign of poor workmanship, construction, or supervision—generally the first named. The sheets of flashing should be soldered to one another. After being turned up on the inside, care should be taken to see that they are not subsequently beaten down by accident.

(To be continued)



HOUSE OF
HERBERT ALLEN, JR.
LOS ANGELES,
CALIF.

ROLAND E. COATE,
ARCHITECT

The profession as a whole continues to marvel at the restraint and the courage which moves the Southern California architects to produce asymmetrical façades that, on the drawing-board, must appear of questionable success, but which, in the final setting, so seldom fail of achieving beauty



Below, a corner of the living room in the Allen house, bringing indoors some of the feeling for strong contrasts and broad, unbroken areas that mark the exterior

To those who would say that planting, sunlight and shadow are responsible for half the success of Southern California architecture, we would reply that the architects have learned the foils for that wealth of sun and luxuriance: the unbroken wall area of stucco or painted brick, the proper overhang for tile-edge shadows, the drawing closely together of house and its garden so that the two become one



THE SEVENTY-SEVENTH IN A SERIES OF COLLECTIONS OF PHOTOGRAPHS
ILLUSTRATING VARIOUS MINOR ARCHITECTURAL DETAILS

ARCHITECTURE'S PORTFOLIO OF METAL STAIR RAILINGS

*Subjects of previous portfolios are listed below
at left and right of page*



*Below are the subjects of
forthcoming Portfolios*

Verandas

APRIL

The Eagle in Sculpture

MAY

Eaves Returns on

Masonry Gables

JUNE

Exterior Lettering

JULY

Entrance Driveways

AUGUST

Corbels

SEPTEMBER

*Photographs showing interesting
examples under any of these head-
ings will be welcomed by the Edi-
tor, though it should be noted that
these respective issues are made up
about six weeks in advance of
publication date.*

❖ 1926
DORMER WINDOWS
SHUTTERS AND BLINDS

❖ 1927
ENGLISH PANELLING
GEORGIAN STAIRWAYS
STONE MASONRY TEXTURES
ENGLISH CHIMNEYS
FANLIGHTS AND OVERDOORS
TEXTURES OF BRICKWORK
IRON RAILINGS
DOOR HARDWARE
PALLADIAN MOTIVES
GABLE ENDS
COLONIAL TOP-RAILINGS
CIRCULAR AND OVAL WINDOWS

❖ 1928
BUILT-IN BOOKCASES
CHIMNEY TOPS
DOOR HOODS
BAY WINDOWS
CUPOLAS
GARDEN GATES
STAIR ENDS
BALCONIES
GARDEN WALLS
ARCADES
PLASTER CEILINGS
CORNICES OF WOOD

❖ 1929
DOORWAY LIGHTING
ENGLISH FIREPLACES
GATE-POST TOPS
GARDEN STEPS
RAIN LEADER HEADS
GARDEN POOLS
QUOINS
INTERIOR PAVING
BELT COURSES
KEYSTONES
AIDS TO FENESTRATION
BALUSTRADES

1930 ❖
SPANDRELS
CHANCEL FURNITURE
BUSINESS BUILDING ENTRANCES
GARDEN SHELTERS
ELEVATOR DOORS
ENTRANCE PORCHES
PATIOS
TREILLAGE
FLAGPOLE HOLDERS
CASEMENT WINDOWS
FENCES OF WOOD
GOTHIC DOORWAYS

1931 ❖
BANKING-ROOM CHECK DESKS
SECOND-STORY PORCHES
TOWER CLOCKS
ALTARS
GARAGE DOORS
MAIL-CHUTE BOXES
WEATHER-VANES
BANK ENTRANCES
URNS
WINDOW GRILLES
CHINA CUPBOARDS
PARAPETS

1932 ❖
RADIATOR ENCLOSURES
INTERIOR CLOCKS
OUTSIDE STAIRWAYS
LEADED GLASS MEDALLIONS
EXTERIOR DOORS OF WOOD
METAL FENCES
HANGING SIGNS
WOOD CEILINGS
MARQUISES
WALL SHEATHING
FRENCH STONEMWORK
OVER-MANTEL TREATMENTS

1933 ❖
BANK SCREENS
INTERIOR DOORS

*Arthur Munson**Delano & Aldrich**Sterner & Wolfe**Moise Goldstein*



Bradley Delehanty



Gable & Wyant

Pliny Rogers

Arthur Loomis Harmon



*Greville Rickard**Tilghman Moyer Company**Tilden, Register & Pepper**Roland E. Coate*



William M. Ingemann



Richard Arnold Fisher

In a Florentine palace

William M. Ingemann



*Henry Powell Hopkins**Francis A. Nelson**Melvern R. Evans**Meade & Hamilton*



Davis, Dunlap & Barney



Hugh L. Allward

Felix Burton

Hentz, Adler & Shutze



*Lucian E. Smith**F. G. Dempwolf**Carl A. Ziegler**Joseph H. Freedlander*



Tilden, Register & Pepper



Marion Sims Wyeth

Greville Rickard

Roland E. Coate



*Delano & Aldrich**Arthur Loomis Harmon**Morgan, Walls & Clements**G. Stanley Wilson*



Meade & Hamilton



Fred Wesley Wentworth

Philip L. Goodwin

The Office of John Russell Pope





Kilham, Hopkins & Greeley



Aymar Embury II

Schultze & Weaver

Schilling & Schilling





Walter W. Ahlschlager, Inc.



Corbett, Harrison & MacMurray

Walter Hagedorn

Schultze & Weaver



*Easton & Robertson**Cedric Gibbons; Douglas Honnold**The Firm of Ely Jacques Kahn**Lundeen, Hooton, Roozen & Schaeffer*



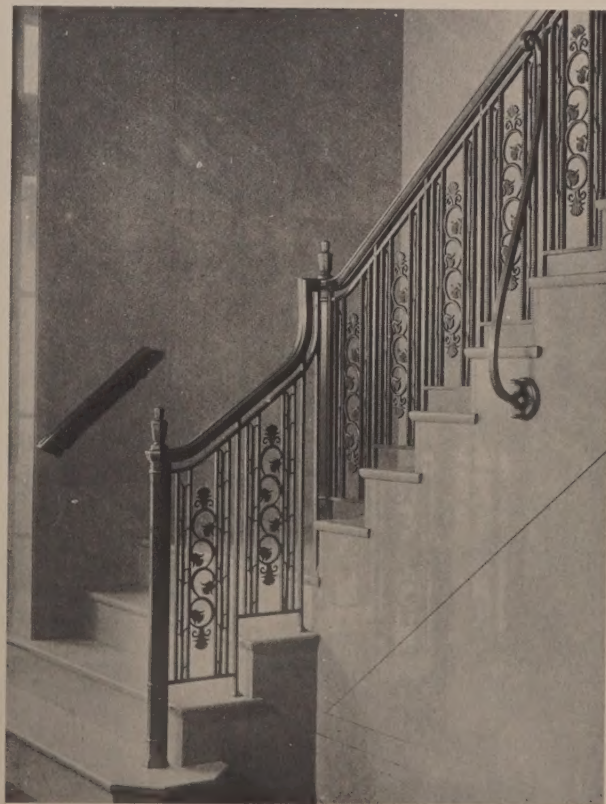
Alfred C. Finn



DeYoung, Moscovitz & Rosenberg

John M. Howells; Raymond M. Hood

Albert Kahn, Inc.





*Ironwork Balusters,
English, Early
Eighteenth Century*

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Sir Edwin Lutyens



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